Manitoba
Natural Resources

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PLANNING REPORT
ON NATURAL
RESOURCES

DEL-WIN
PLANNING DISTRICT

Technical Report 86-5

PREFACE

Municipal Councils or established Planning District Boards are charged with the responsibility for municipal land use planning and development. This document has been prepared in response to a request from the local municipal planning authority for background material on the subject of natural resources for which the Department is responsible.

This document describes the natural resources in the study area, and identifies Provincial and Departmental concerns and objectives from a land use, development planning perspective. It offers for review, policies and guidelines to remedy, mitigate or anticipate issues and land use problems.

The bases for this report are the Provincial Land Use Polices dealing with natural resources and the policies of Manitoba Natural Resources.

Municipal planning is a consultative process, and the information and policies discussed in this document are offered as advice to the local authority in their land planning deliberations.

INTRODUCTION

This report provides information and recommendations from Manitoba Natural Resources for the use and management of lands, and resources in the Rural Municipality of Winchester.

The contribution of this Department to the planning process of the other component of the Planning District, the Town of Deloraine, was contained in an earlier document, "Department of Natural Resources Input to the Town of Deloraine Development Plan", date 3 August 1983. The document was concerned exclusively with the ground and surface water resources of the Town.

This Planning Report should be considered as being supplemental to the earlier report and completes the Department's input to the Del-Win District.

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FISHERY RESOURCES

I. PRESENT CONDITIONS/INTRODUCTION

Most waters in the Planning District are shallow, highly fertile and barren of sport fish species. Angling opportunities are limited, demand is high and available fisheries (i.e. Deloraine Reservoir and Metigoshe/Dromore Lakes) are characterized by intensive use and low angler catches. All waters suitable for sport fisheries are in use and increased fish production will require costly developments designed to improve and maintain fish habitat and fish stocks.

Most small winterkill waters in the Planning District, even though they may be of local significance (e.g. trout farm ponds), will not be considered here. Also, all waters lying entirely within the Turtle Mountain Provincial Park have been omitted. However, some more productive waters will be considered in detail (Table 1 and Map 1).

The major factor limiting sport fish potential is the annual winterkill conditions in most waters. Summerkill can also be a problem during and after periods of high algae production.

Most fishkills develop when fish suffocate from a lack of dissolved oxygen in the water. Critically low dissolved oxygen levels and reduced water quality are a frequent natural phenomenon in small, fertile waters that are subjected to long periods of ice cover and deep snow. Oxygen depletion is caused in part by bacterial decomposition of organic matter (aquatic weeds and algae) at a time when excessive ice and snow prevents oxygen input through natural production under the ice or aeration from surface mixing. Shallow lakes have a low volume relative to their surface area so the quantity of dissolved oxygen stored in the water before ice cover occurs is usually insufficient to last through the long winters.

Increasing lake fertility is a natural, continuous process of lake aging, but some of man's activities have accelerated this process. The protection and enhancement of fish habitat is required if local fisheries are to be maintained and improved.

Fertile waters can promote exceptional fish growth but overly fertile waters promote algae and weed growth which can, indirectly, result in fishkills. Due to area geology, agricultural development and the morphometry of natural waterbodies, the potential for fisheries development has always been limited. The lack of low nutrient water for flushing and dilution results in the concentration and recycling of nutrients within established waters. Also, erosion and sedimentation result in shallower, more fertile waters, which, in turn, are conducive to algae and aquatic weed proliferation. Excessive algae growth affects water clarity, colour, taste and odour. Some forms of algae clog filters and nozzles, develop toxic zones near lake bottoms, increase water supply treatment costs, and impair general lake aesthetics. Algae "blooms" and "collapses" create widely fluctuating dissolved oxygen levels which can stress fish and reduce their catchability.

Excessive aquatic weeds and filamentous algae, aside from promoting fishkill conditions, interfere with water-based recreational use. The physical presence

of weeds, for example, reduces boating, swimming, angling and lake aesthetics.

A number of projects designed to reduce flooding and soil erosion have been developed by the Turtle Mountain Conservation District. These are very worthwhile in that eroded, organically rich soils are normally high in phosphorous which is probably the most significant element that fertilizes lakes and streams. A reduction in wind and water erosion will reduce the nutrient loading of receiving waters. Lakes, however, are sediment and nutrient traps. These nutrients can support weed and algae growth year after year, even without new additions, as nutrients are recycled from the lake sediment. This is not meant to diminish the many benefits derived from good watershed management practices. Instead, it should be realized that, although water quality responses to reduced loading do not always result in a marked improvement in water quality, good watershed management can maintain existing water quality and reduce the rate of further deterioration.

1. QUALITY WATERS

(a) Deloraine Reservoir

Deloraine Reservoir was constructed in 1962 and is controlled by Manitoba Natural Resources, Water Resources. It serves as the Town of Deloraine water supply and is a local recreation area. Most inflow is from Turtlehead Creek which rises in the higher land toward the Turtle Mountain. Some tributaries lie in agricultural areas. For several years livestock operations, land use, sedimentation and nutrient loading from eroding soils have impacted reservoir water quality. This impact has caused algae and weed proliferation in the reservoir. Overgrazing has been noted on some upstream pasturelands and, along the east side of the reservoir, the land has occasionally been cultivated close to the reservoir's edge.

Waters are highly fertile and although this reservoir has never experienced significant fishkill, strong thermal and chemical summer stratification is impacting water quality and fish habitat. The poor summer water quality on the bottom of this reservoir is probably due to the active decomposition of heavy algae blooms, the relatively small size of this waterbody, its moderate depth and the inability of prevailing winds to consistently mix the total water mass from top to bottom (due to the higher surrounding shorelines and high tree cover on the south and west embankments). In midsummer, it is common to find the bottom ten to fifteen feet of water at, or near, zero dissolved oxygen. Fish will attempt to remain above this toxic zone but much summer fish habitat is lost. Also, domestic water supplies withdrwan from this zone will be fouled and difficult to treat at the water treatment plant. Average winter dissolved oxygen levels are showing a slight downward trend from earliest recorded readings (1966) to the present.

Over the past 20 years, the reservoir has been stocked at varying intervals with various species of fish (Table 2). The extent of the angler harvest has never been accurately estimated. Poor angling success is an increasing complaint. Reduced angling success probably relates to the following:

Table I. Some basic characteristics of some waters within the Del-win Planning District. Aeration costs are for "bubble" systems only and capital costs include the cost of bringing hydro to the site and developing access. Operational costs do not include supervision.

Water (Location)	Class	Surface Area Ha (ac)	Max. Depth m (ft)	Present Fishery	Aeration Costs $(000) Capital	Operational/ year	Comments
Deloraine Reservoir (19-2-22W)	Quality Fishery	40 (98)	12 (39)	Pike, perch walleye, bass	15.0*	2.0*	- constructed in 1962 - town water supply - bottom stagnation problem
Metigoshe Lake (4-1-22W)	Quality Fishery	22 (55) in Manitoba	1.8 (6) in Manitoba	Unknown	No estimate made		- no longer stocked or monitored by Manitoba
Dromore Lake (11-1-22W)	Winter-kills frequently	90 (223)	1.8 (6)	Pike, perch	Too shallow to aerate		- spawning and nursery area for Lake Metigoshe fish.
Sharpe Lake (14-1-22W)	winter-kills frequently	166 (410)	4.6 (15)	None	9.8**	1.8**	- long term water commitments to North Dakota. Pike present in early 1950's.
Steepside Lake *** (1-1-23W)	winter-kills frequently	13.4 (33)	5.8 (19)	None	6.3	1.0	- remote with poor access
Goldie Lake (22-1-23W)	winter-kills frequently	18.2 (45)	4.6 (15)	None	7.2	1.0	- completely surrounded by private land
Flossie Lake (22-1-23W)	winter-kills frequently	33.6 (83)	6.7 (22)	None	10.0	1.8	- development of road allowance possible for access

* Costs could be less; depends on system adopted

** Costs could be more; depends on whether both basins can be served from one site

*** Unofficial name

(1) Deteriorating fish habitat and water quality. This problem was discussed above but the direct impact on fish could relate to (a) stress and its resulting effect on fish catchability (caused by fluctuating algae abundance and associated dissolved oxygen level), and (b) a confined summer environment whereby all fish species are crowded into the upper oxygenated water layers allowing for effective predation by large predators (e.g. pike and perch predation on young walleye). Intensive walleye stocking in recent years has met with limited success.

(2) Fish species composition. At present, perch are the most dominant species in the reservoir. They are known to be predatory on walleye fry and small forage fish. The fall stocking of larger walleye, fingerlings ranging from 4-6 inches in length, is being pursued. Variable walleye rearing success in area ponds, however, has allowed only about 11,000 fingerlings to be stocked since 1980. There has been a de-emphasis on pike stocking in an effort to enhance the preferred walleye species. Pike still persist through natural reproduction. Bass numbers have never been large as natural spawning success appears to be minimal.

(3) Fish losses from the Reservoir. When flows are substantial, perch and pike have been known to wash over the drop spillway and as a result of their vertical fall, die in the rock rubble below the spillway. Walleye fry may also be lost if high flows coincide with stocking. Because of this, fry are normally stocked as far up the reservoir as possible to limit this type of loss. A spillway barrier has been placed near the entrance to the spillway, by persons unknown, presumably to prevent fish losses. However, the screen is not always maintained and an improved design plus greater surveillance may be more effective in preventing fish losses.

The low level discharge has been operated more frequently in recent years in an effort to reduce nutrient rich water and sediments that continually build up on the reservoir bottom.

This has been initiated in most springs when full supply level has been attained. Lengthy releases could result in the discharge of fish that are attracted to the outflow. This would only occur when the water quality was suitable for fish presence. Most recently, in late July 1986, a short period of release was initiated when tests indicated that the bottom ten feet of depth held less than 1.5 ppm of dissolved oxygen. Relatively poor water quality was still evident when the gate was reclosed so it is unlikely that any fish were lost during this type of release procedure.

(4) Copper Sulphate Use. Relatively low levels of copper, in larger than trace amounts, are toxic to most biotic forms, including fish. Invertebrates, that are vital to the fish food chain, are even more susceptible to destruction than fish. Algal abundance within the reservoir must be controlled to protect this important domestic water supply. However, proper application procedures and concentrations should be adhered to at all times. Even sublethal levels for fish will act as an irritant and the resulting stress will reduce fish catchability.

Table 2. Historical stocking of area waters (in alphabetical order)

LOCATION	YEAR	SPECIES PLANTED	NUMBER	AGE
Deloraine Reservoir	1966	Northern Pike	475	Adult
(Formerly called	1966	Perch	550	Adult
Turtle Head Creek)	1967	Northern Pike	125	Adult
	1967	Perch	1,150	Adult
	1968	Northern Pike	300	Adult
	1968	Perch	2,200	Adult
	1969	Northern Pike	400	Adult
	1970	Perch	1,000	Adult
	1970	Smallmouth Bass	34	Adult
	1971	Smallmouth Bass	2,000	Fingerlings
	1971	Walleye	150,000	Fry
	1972	Brook Trout	1,000	Yearlings
	1972	Perch	1,000	Adult
	1979	Walleye	200,000	Fry
	1980	Walleye	50,000	Fry
	1980	Walleye	2,940	Fingerlings
	1980	Smallmouth Bass	25,000	
	1981	Walleye	263	Fingerlings
	1982	Walleye	200,000	Fry
	1982	Walleye	5,326	Fingerlings
	1984	Walleye	100,000	Fry
	1984	Largemouth Bass	10,400	
	1985	Walleye	100,000	Fry
	1985	Walleye	3,050	Fingerlings
	1986	Walleye	100,000	Fry
Flossie Lake	1936	Walleye	100,000	Fry
	1947	B. Bass	500	Fingerlings
	1948	B. Bass	500	Fingerlings
	1949	Blk. Bass	500	Fingerlings
	1950	Blk. Bass	1,000	Fingerlings
	1955	Rainbow Trout	6,000	Fingerlings
Metigoshe Lake	1929	Walleye	125,000	Fry
	1930	Walleye	125,000	Fry
	1933	Walleye	200,000	Fry
	1934	Walleye	150,000	Fry
	1935	Walleye	200,000	Fry
	1936	Walleye	150,000	Fry
	1937	Walleye	350,000	Fry
	1939	Walleye	300,000	Fry
	1940	Walleye	200,000	Fry
	1941	Walleye	250,000	Fry
	1942	Walleye	300,000	Fry
	1943	Walleye	450,000	Fry
	1949	Walleye	510,000	Eyed Eggs
	1950	Walleye	510,000	Eyed Eggs
	1952	Walleye	510,000	Eyed Eggs
	1953	Walleye	850,000	Eyed Eggs
	1956	Walleye	1,500,000	Eyed Eggs
	1957	Walleye	1,500,000	Eyed Eggs
	1961	Rainbow Trout	50,000	Fingerlings

(b) Metigoshe Lake/Dromore Lake

The majority of Metigoshe Lake surface area lies in North Dakota. Except for water importation, Manitoba no longer provides management inputs (e.g. fish stocking and water quality monitoring and control). Past and current management information is best obtained from North Dakota authorities.

Dromore Lake is often connected to Metigoshe Lake by an improved natural drainage channel. Dromore Lake is too shallow to overwinter fish but it does serve as a valuable spawning and nursery area for fish stocks originating in Lake Metigoshe.

In the spring of the year, dead fish have been reported in Hasselfield Lake. Reportedly, a channel was developed (by unknown persons) between Dromore and Hasselfield Lake which allowed fish into Hasselfield Lake. Hasselfield Lake is very shallow and winterkill is likely in most winters.

2. WINTERKILL WATERS (PROBABILITY OF WINTERKILL GREATER THAN .50)

Very little information is available on most winterkill lakes. Available data is based on limited study and records are old; much information dates back to the 1960's or before. Undoubtedly, much of the information provided in this sector would change if more current information was available. Obviously, possible resource development proposals and costs considered in this report should be viewed in the light of these constraints. Table 1 includes all waters that will be considered in this category.

Most of these waters have received little or no fisheries management. Periodically, all waters have been monitored for dissolved oxygen and a few have been tested for the presence of fish. All are devoid of sport fish species. All waters would require further study prior to the implementation of lake restorative measures.

Most waters are sufficiently deep to be aerated by some means. For this reason, roughly calculated "bubble" aeration costs are provided (Table 1) even though for some of the more remote lakes, such as Steepside Lake, bringing hydro power to the aeration site may be highly impractical at this point in time.

(a) Sharpe Lake

Sharpe Lake is a very fertile, weedy lake that could benefit from various forms of rehabilitation, e.g. weed harvesting and aeration. Cottage development has occurred on portions of the shoreline outside Turtle Mountain Provincial Park. Periodically, pike have survived in Sharpe Lake. The last reported winterkill occurred in 1954. Repeated dissolved oxygen testing on Sharpe Lake almost invariably shows winterkill conditions so fish restocking has not been attempted. Sharpe Lake aeration costs are based on the assumption that total aeration of the south basin would attract fish from the north basin (a form of partial aeration). The practicality of the approach would require further investigation. For example, in 1958, permission was granted to the Oak Creek Conservation and Flood Control District to place a control dam on the outlet of Sharpe Lake and to regulate Sharpe Lake water elevations for the purpose of enhancing water based recreation on Metigoshe Lake. It is assumed this

authority still exists so severe drawdowns on Sharpe Lake could seperate the lake into two separate water bodies isolating fish in the north basin from aerated water in the south basin. Only a shallow, narrow channel (less than 1 meter (3 feet) deep in some years) separates the two main basins so severe ice depths and/or drawdown could block fish-attracting flows and fish movement between the basins.

(b) Steepside Lake

This remote lake lies adjacent to the U.S.-Canadian border. Snowmobile access is possible along the International boundary. Dissolved oxygen tests conducted in 1977 showed critically low dissolved oxygen levels. This lake has never been stocked and would require aeration of some type. The clearing of winter snow cover from about 8 surface acres would allow natural dissolved oxygen production under the ice that may be sufficient to overwinter fish stocks. More suitable access for snow clearing and fish stocking would be required.

(c) Goldie Lake

Goldie Lake is completely surrounded by private land. Access agreements would have to be developed with adjacent landowners. Hydro is about one half mile away if aeration is implemented. If agreeable to landowners, Fisheries Branch would be prepared to conduct further investigations, such as lake depth sounding and winter dissolved oxygen testing.

Winter dissolved oxygen testing in 1966 and 1977 showed very low results. Some form of aeration (e.g. snow clearing, water pumping or a bubble system) would be required if agreement is reached regarding access and future development. Fisheries Branch has no record of fish stocking in this lake.

(d) Flossie Lake

Flossie Lake has no public access, but road allowances could be developed to the lakeshore. Further investigations and landowner contracts should be conducted prior to designing and implementing lake rehabilitation procedures.

Winter dissolved oxygen tests in 1966, 1968 and 1974 showed fairly low results in most years. Some type of aeration would be required for long term sport fish establishment.

3. OTHER WATERS

Most other waters in the District (e.g. Whitewater Lake) are too shallow to develop into permanent fisheries. A few farmers operate hobby trout ponds on private land.

A number of headwater streams arise in the District and are of indirect value to fisheries. Waskada Creek and Medora Creek, for example, support fish runs near the Souris River when flows allow. Most of the adult spawners return to the river immediately after spawning but the tributaries can serve as rearing areas for the newly hatched fry and fingerlings. Although the fish-producing portions of these streams lie outside the District, activities within the District can impact the usefulness and success of these spawning areas.

Spring activity is apparent at several locations along the foothills. For example, a seismic shot hole in the northern part of 14 - 2 - 22W forms a small continuous stream while flows from a spring were capped at a site near the junction of the north boundary of 14 - 2 - 22W and the Metigoshe Lake road (Provincial Road 450). The damming of spring flows can be used to develop year around fisheries (e.g. a private trout pond on SE 21 - 2 - 21W).

Fisheries Branch would be prepared to investigate District stream and/or spring areas to which the right of public access is assured. If there are future requirements in such areas, for example, to create reservoirs for domestic use and/or water conservation and control, their cooperative development could provide additional sport fishery benefits for the District.

II. CONCERNS/OBJECTIVES

The Deloraine Reservoir and Lake Metigoshe fisheries are the most significant in the Planning District. Other waters without present fisheries could have fish producing potential if various constraints and options are addressed.

The shallow nature of existing waterbodies, intermittent flows, erosion, nutrient loading and drainage have impacted water quality and some fish stocks. Any factors that adversely influence water quality or quantity can adversely influence fish populations. Since demand is high and fishing opportunities are few, existing fisheries and upstream watersheds should be protected from nutrient loading and contamination.

Fish are a renewable resource and it is incumbent upon all governments to ensure the provision of a suitable habitat that will assure continuing fish stocks for the long term benefit of all Manitobans.

Specifically, the fisheries concerns/objectives are:

Objectives:

1. To ensure the survival or improvement of fish stocks, subject to the effects of natural environmental changes and approved man-made environmental changes. Fish habitat associated with Deloraine Reservoir, Dromore Lake and Metigoshe Lake should be protected. The Souris River lies outside the Planning District but activities along Medora Creek, Waskada Creek and other tributaries can impact this fishery. These tributaries can support fish runs and serve as rearing areas for several fish species. Winterkill lakes with future development potential should also be protected.

2. To maintain, enhance and diversify angling opportunities for Manitobans to meet existing and future demands.

3. To promote communication and cooperation between private landowners, industry, the public, local government and Manitoba Natural Resources so as to achieve high standards of conservation practices.

III. POLICIES/GUIDELINES

Although fisheries habitat is being stressed and has been reduced, what remains can be retained and enhanced by judicious use of land and water in the Planning District. The Turtle Mountain Conservation District has shown an awareness of these problems and the corrective action which they have taken to date should be applauded and encouraged. In order to achieve the fisheries objectives and to mitigate and alleviate concerns, the following apply:

1. Fisheries habitat, spawning sites and nursery areas should be protected.

   (a) Ditching and stream rechannelization, whenever practicable, should not be permitted in direct tributaries to the watershed capable of supporting spawning and nursery habitat. The construction of dykes as opposed to channel deepening and straightening shall be encouraged. Measures to limit nutrient and sediment inflow shall be encouraged.

   (b) Land clearing, cultivation and development to the edge of significant waterways shall be prohibited. Development or maintenance of appropriate vegetative cover along waterways to prevent erosion, siltation and reduce runoff shall be encouraged. Where possible a buffer strip of natural vegetation 91.5 meters (300 feet) wide from the ordinary high water mark shall be maintained along the watershed. As a minimum, buffer strip widths should be 12 m (40 feet) plus 1.5 times slope gradient (%), along each side of the stream or waterbody.

2. Shorelines subject to intensive use and development should be protected from excessive erosion and organic loading. Activities that discharge pollutants shall be restricted in their location and it may be required that precautionary safeguards that mitigate the pollutant be incorporated into the development activity.

3. The right of public access to fishing waters shall be maintained in accordance with such acts, regulations and contracts that are in place from time to time.

4. Protection and improvement of Deloraine Reservoir should be a priority. Some rehabilitative measures will likely be required in the near future. Summerkill intensity and reduced water quality will likely increase unless nutrient levels are reduced by various means.

   (a) Low Level Discharges. Late winter and midsummer low level discharges should be continued (whenever water supplies allow), but the period of discharge should coincide with the period of withdrawal of low dissolved oxygen water. Removal of foul bottom water should help reduce nutrient recycling in the reservoir but prolonged discharges of oxygen rich water could result in the loss of fish.

   (b) Watershed Protection. Good watershed management should be practised along all tributaries to Deloraine Reservoir. Most notably, existing forest cover should be maintained wherever possible while improved permanent cover is required on lands adjacent to the east side of the reservoir.

(c) Aeration. This procedure may be required in the near future if other approaches (e.g. low level discharges) are unsuccessful. An improved town water supply and expanded and improved fish habitat could be expected through aeration. Aeration would reduce the need for low level discharges, reduce algal problems (based on previous aeration results) and reduce nutrient recycling in the reservoir. Midsummer operation would be mandatory but winter aeration may not be required.

Because of the above-average depth and associated high hydrostatic heads at Deloraine Reservoir, traditional aeration would be relatively expensive: probably $15,000 for capital and $2,000/year for operation/maintenance; supervisory costs are not included. A modified aeration scheme could be considered that would reduce both capital and operational costs. This option could be explored if a decision is made to proceed with an aeration program.

(d) Fish Screening. A finer screen on the spillway would help to reduce walleye fingerling losses. The size of the mesh openings should be kept at, or below, 3/8 inch. Screen supervision during high flow periods would be required. A coarse upstream screen and/or log boom situated at the entrance to the spillway would help reduce debris clogging of the finer meshed screen.

5. The channel developed between Dromore Lake and Hasselfield Lake should be deepened or blocked before spring to prevent spawning fish from becoming stranded in Hasselfield Lake.

IV. IMPLEMENTATION

The objectives and policies with respect to fisheries shall be implemented as follows:

1. By assistance and advice on conservation practices by the staff of Manitoba Natural Resources.

2. By public and private cooperation through management and development agreements.

3. By the Council through the judicious use of restrictive zoning bylaws, subdivision control procedures and the issuance of development permits.

FORESTRY RESOURCES

I. PRESENT CONDITIONS/INTRODUCTION

The Del-Win Planning District lies within the Aspen Parkland Forest Section, specifically Forest Management Unit 06 as defined in the 1980 Manitoba forest inventory classification system (Map 2). The Forest inventory on the area was completed in 1986. Both Crown land and private land forest inventory information is available and should be of benefit to landowners in the area. Field forest measurements that were required on private lands to complete the forest inventory were only done with permission from the landowners.

For areas in close proximity to population centres, landowners with forested land on their holdings might consider growing trees as a crop, such as fuelwood for example. This is particularly true for land unsuitable for other agricultural purposes but still capable of supporting tree growth.

While trees and forests have value as a renewable cash crop, their presence is valuable in other ways. These include control of precipitation run-off and retarding snow melt to lessen flood risk; erosion control both water and wind; a habitat for wildlife; and recreation opportunities for people. Furthermore, forest harvesting operations can be done in a manner that will enhance all forest values; however, it is essential that fire be kept out, destructive grazing be avoided, and any utilization or disposal of elm trees be in conformance with The Dutch Elm Disease Act and Regulations.

II. CONCERNS/OBJECTIVES

Principal Objective:

To effectively manage and protect forested lands, and to maintain and enhance the overall benefits accruing from the forest resource.

Specific Objectives:

1. To sustain the integrity of the forest land base in Manitoba and to maintain the forest resource in a healthy and productive state.

2. To encourage responsible use and husbandry of the forest resource, to obtain maximum achievable net benefits including employment and recreation opportunities, sound land use practices and soil conservation.

3. To assist in the creation and sustenance of self-supporting industries by providing appropriate tenure and access to a forest resource managed under sustained yield practices.

III. POLICIES/GUIDELINES

The general policy applying to forests on Crown land will be to improve sustained yield and intensive management practices beginning with the more productive and accessible forest sites in the Province as economic conditions and funding support permits.

The general policy applying to forests on private land will be to encourage efficient and effective utilization of these timber resources as cash crops, and as a soil conservation land use technique for controlling erosion, etc.

IV. IMPLEMENTATION

The objectives and policies as outlined shall be addressed and implemented as follows:

1. By the Board and/or Councils through the judicious use of restrictive zoning by-laws, subdivision control procedures and the issuance of development permits which recognize the intent of the concerns and objectives identified.

2. By encouraging good forest managment practices on all forested land.

3. By maintaining the integrity of the forest land base.

4. By assistance and advice on conservation practices by staff of Manitoba Natural Resources and by public and private co-operation through management and development agreements.

OUTDOOR RECREATION RESOURCES

I. PRESENT CONDITIONS/INTRODUCTION

The recreational resources of the Planning District are focussed on two particular parts of it: Turtle Mountain and Whitewater Lake (Map 1). Certain of the waterbodies in the escarpment of the Mountain also provide relatively good recreational opportunities.

The small portion of Turtle Mountain Provincial Park which is located in the Planning District is suitable for camping, hiking, fishing, and winter recreation (cross-country skiing, ice fishing, snowshoeing, snowmobiling). Immediately to the west of this, Metigoshe Lake has a comparatively high capability for such shoreline-related activities as swimming and boating, as does Flossie Lake further west. The whole of the Mountain and Escarpment areas are relatively picturesque.

Parks Branch has prepared and had approved (1985) a Management Plan for the Park, which they consider possesses "exceptional value in illustrating and interpreting the natural landscape of Manitoba", specifically the Turtle Mountain. The part of the Park in the Planning District, which contains no major developments other than the Scout Camp at Sharpe Lake, has been divided into Commercial Resource/Recreation, Recreation, and Backcountry Zones. No development of these areas are proposed. Among the exceptional natural features of the Park is a small (30 to 35 animals in the part of the area in the District) herd of moose. Parks and Wildlife are currently preparing a Moose Management Plan which will determine appropriate consumptive and nonconsumptive recreational opportunities for the herd.

The segment of Turtlehead Creek above and below the Deloraine Reservoir is suited to camping and boating. An area of exceptional slope in Sections 19, 20, 28, and 29 in Township 22-1W, a part of which is in the Turtle Mountain W.M.A., is well suited for downhill skiing, a scenic view, and the observation of wildlife.

Whitewater Lake's shallowness and the absence of beaches limits recreational value to the observation of the tens of thousands of waterfowl which congregate there in the fall prior to southward migration. The consumptive harvest of this resource by hunters is well established, but the non-consumptive opportunities have yet to be developed. Potential exists for development of viewing areas complete with interpretive facilities, serving local, regional and provincial demand. Facility development could involve trails, viewing blinds, and interpretive features such as signs, brochures, and possibly a small nature centre. A portion of the lakeshore and lakeshore environment should be dedicated to nonconsumptive resource users to develop the recreational and educational opportunities which currently exist in the fall prior to southward migration.

II. CONCERNS/OBJECTIVES

The future development of the Planning District should consider the potential for outdoor recreation, maintenance or enhancement of environmental quality and prevention of land use conflicts with outdoor recreation uses. In this respect, the physical and natural resources of the District are most important

and require identification, maintenance and protection. Land of high quality for outdoor recreational purposes is very limited in the District, so that care must be taken to minimize disruption or damage engendered by conflicting uses or developments on adjoining lands. Insufficient regulation of such conflicts, and inadequate support for outdoor recreational activities can result in temporary or permanent degradation of the District's recreational resources.

The following are specific objectives:

1. Lands adjoining the lakes identified in the Fisheries Resources section, the Wildlife Management Areas and Ducks Unlimited projects identified in the Wildlife Resources section, and the area in Township 22-1W noted above should be regulated to insure that the character of these areas is retained.

2. In respect of Turtle Mountain Provincial Park, the Development Plan should seek to retain the atmosphere of a quality rural setting with diverse recreational opportunities by ensuring that:

   a) the areas immediately adjacent to (up to 3 miles from) the Park should not be considered for intensive development or development that would rely on the Park for the provision of recreational opportunities,

   b) space standards and carrying capacity figures be used by District administrators to assess recreational proposals for the District and that the standards chosen for the District reflect the capability of the region to support recreational use.

3. That other areas found to be suitable for outdoor recreational activities, not referenced in (1) or (2), above, be identified and protected from uses on adjacent lands which would diminish or endanger their usefulness for these activities.

4. Development in recreation areas should not exceed the carrying capacity of the resource. In particular, recreation areas should be protected from unplanned residential development and other potentially conflicting uses.

5. Major road access corridors to recreation areas, including the Provincial Park and the Whitewater Lake Wildlife Management Area should be identified and afforded protection from environmental and aesthetic degradation. The right of public access to outdoor recreation opportunities must be ensured.

6. The variety of natural, historic, cultural, and recreational features and facilities found in the District should be profiled by means of information and museum displays, interpretive programming, and school outdoor education programs. Sites with interpretive significance (such as historical sites) should be protected by means of buffers or zoning by-laws.

III. POLICIES/GUIDELINES

1. All Class 3 (Canada Land Inventory) recreation areas shall be defined and given proper recognition. Resource and land use policies in these areas shall give the highest priority to outdoor recreation.

2. All Class 4 (C.L.I.) areas on the Turtle Mountain and escarpment, surrounding Whitewater Lake, and along Turtlehead Creek are of local and regional significance and should be recognized as providing opportunities for certain outdoor recreational activities, including hiking, hunting, cross-country skiing, and wildlife and landscape viewing. While outdoor recreation may not always be considered the use of highest priority, other uses must consider the potential effects on outdoor recreational interests. Some of these lands must be preserved for recreational purposes if benefits to the community are to be maintained or improved.

3. Control shall be exercised in the approval of seasonal or permanent rural residential development. It may be desirable to separate such developments from prime recreational areas. Specific areas for future cottage or rural residential development shall be identified and promoted in order to reduce uncontrolled development. Scattered or random residential development would generally be in conflict with outdoor recreation priorities in Class 3 and 4 (C.L.I.) areas. Permanent non-farm or seasonal residences would generally not be allowed in these areas outside of planned and designated sites; existing residences of these types in these areas should be identified as non-conforming uses.

4. Existing areas and routes of public access shall be recognized and maintained or improved.

5. Development policies respecting lands adjacent to and along access roads to the Park and to other recreation areas shall not permit the quality of the recreational opportunity to be degraded or endangered. Strip development along provincial and major municipal roads shall not be allowed.

6. The Planning Distict shall encourage the development and growth of outdoor recreation enterprises and service functions which are compatible with the character of the community and the nature of the recreational area, and which provide a source of employment.

7. Agricultural land use practices and policies applying to areas within or in close proximity to important outdoor recreation areas shall not adversely affect the recreation opportunities. Equivalent limitations shall apply to other land use practices in these areas.

IV. IMPLEMENTATION

The objectives and policies can be achieved by means of appropriate zoning by-laws, conditions of subdivision approval, development permits and building permits.

Consultation with staff of Manitoba Natural Resources is encouraged.

WATER RESOURCES: GROUNDWATER

I. PRESENT CONDITIONS/INTRODUCTION

The availability of groundwater in the District varies over a wide range: in some parts of it groundwater is readily available while in other areas potable-water aquifers do not exist (Figure 1).

In general, groundwater is fairly readily available on the slopes of Turtle Mountain. The slopes are underlain by an extensive sandstone aquifer that yields adequate supplies for domestic and normal farm requirements and at some locations may be suitable for moderate industrial or municipal requirements (Map 3). Groundwater quality in this area generally is fair to good.

In the Turtle Mountain upland area, the most common aquifers are formed by lenses of sand and gravel interbedded in glacial till. The yield of these aquifers generally is adequate for domestic and farm requirements. In this area groundwater is not as readily available as on the slopes. Indications are that some fairly thick and extensive sand and gravel aquifers that could yield up to 10 L/s (130 I.G.P.M.) may exist in the upland area. Groundwater quality on the upland area is fair to good.

In the lowland area, which occupies most of the northern half of the District, the most common aquifers are fractured zones in the shale bedrock. However, water in the shale often is salty or of very poor quality. Water-bearing lenses of sand and gravel above the shale bedrock are fairly common at the base of the slopes of Turtle Mountain. Water quality in these sand and gravel aquifers ranges from very poor to fair.

In several areas in the District the aquifers are exposed or are covered by only a thin layer of low permeability materials. These areas are groundwater pollution hazard areas as the aquifers are subject to infiltration of pollutants from the surface (Map 4).

II. CONCERNS/OBJECTIVES

The groundwater supply in the District varies considerably from place to place. In the southern half of the District the availability of groundwater is, in general, adequate for present requirements and for moderate new development. In the northern part of the District groundwater often is of very poor quality or is salty, and the availability of potable groundwater is very limited. Hence the overall concern is groundwater resource management and protection to assure adequate supplies for existing users and for potential development. In a few areas, mainly in the central and northern parts of the District, shallow aquifers that are subject to pollution exist. Consequently these areas are considered to be groundwater pollution hazard areas.

Objectives

1. To manage the aquifers in a manner that would not deprive existing users of their water supplies and would not be detrimental to the groundwater potential in the District.

2. To maintain groundwater withdrawal within acceptable limits.

3. To prevent aquifer pollution.

III. POLICIES/GUIDELINES

1. Intensive development and high capacity wells should be permitted only in areas where they will not cause a reduction in water supply for existing users.

2. Groundwater consumption should not exceed the total sustained yield of an aquifer.

3. Wells should be installed in a manner that would not be detrimental to the aquifers.

4. Activities that may cause pollution under normal operating conditions or by accident should not be permitted in groundwater pollution hazard areas unless it can be proven by adequate field investigations that the proposed activities will not cause pollution of existing or potential groundwater supplies in the area.

IV. IMPLEMENTATION

Aquifer management is implemented by the Water Resources Branch of the Manitoba Natural Resources under the provisions of the Ground Water and Water Well Act and the Water Rights Act.

Well construction in respect to prevention of detrimental effect on aquifers is regulated by the Water Resources Branch of Manitoba Natural Resources under the provisions of the regulations made under the Ground Water and Water Well Act.

Aquifer pollution prevention is implemented by the Environmental Management Division of Manitoba Environment and Workplace Safety and Health.

WATER RESOURCES: SURFACE WATER

I. PRESENT CONDITIONS/INTRODUCTION

The District contains three distinct physiographic divisions, the uplands and escarpment of the Turtle Mountain, and the lowlands below the escarpment. The uplands constitute the area above elevation 675 metres (2200 feet) and are characterized by rolling, hilly topography with many lakes and marshes. The escarpment falls from an elevation of 675 metres (2200 feet) to about 500 metres (1650 feet) over a distance of 10 km (6 mi.). The resultant rapid runoff has eroded the stream channels to deep, steep-sided ravines. The lowlands consist of land having a mild slope, extending from the base of the escarpment to the outer edges of the District. Watercourses reaching this area of undulating topography become less defined. A main feature of the lowlands is the Whitewater Lake basin which receives runoff from several intermittent streams originating on the escarpment.

The bulk of flooding and erosion problems in the District can be attributed to the presence of the escarpment. Runoff generated on the steep slopes of the escarpment is transported to the more mildly-sloped downstream reaches in very short time periods. As a consequence, the escarpmental areas are subjected to the erosive actions of rapid overland and channel flows, while the areas below the escarpment, where slopes and hence conveyance capacities are considerably lower, receive sudden, very rapid surges of inflow which cannot be passed without channel capacities being exceeded. This results in inundation of areas adjacent to the channel, some of which are land-locked and do not drain upon recession of the flood peak.

All waterways in the District are under the jurisdiction of the Turtle Mountain Conservation District (Map 5).

II. CONCERNS/OBJECTIVES

Flooding and water erosion problems are prevalent throughout the District, affecting rural, agricultural areas as well as the urban centre of Deloraine. Should development or other unsuitable land uses occur in hazardous areas, this may lead to acceleration of environmental damages, interference with natural processes, public expenditures for remedial works or assistance, waste of resources, and personal loss and hardship. In this respect the following objectives are established:

1. To minimize personal hardship and inconvenience, adverse affects on public health and loss of live;

2. To minimize property damage and public expenditures for relief or protection in areas subject to flooding, water erosion, wind erosion, bank instability, landslide or subsidence;

3. To restrict activities which would accelerate or promote damages arising from causes such as erosion or bank instability;

4. To acquire access to all waterways in order to carry out public work projects when required;

5. To maintain the natural capacity of the streams to convey flood flows;

6. To encourage the preservation of natural vegetation along the banks of waterways.

III. POLICIES/GUIDELINES

1. Development in areas which, in the opinion of the Board or Council, may be subject to physical hazards shall generally be limited to agricultural uses or open space uses. Under special economic or social circumstances the Board or Council may permit more intensive development if the hazard is eliminated or protected against. Development in hazardous areas shall be subject to the following requirements;

   a) If the land is subject to flooding all permanent structures must be located on land which has been raised by fill to an elevation at least 0.6 metres above the 100 year flood level.

   b) Land which may be eroded away within a period of 50 years must be excluded from development unless it is demonstrated, to the satisfaction of the Board or Council, that the erosion process has been halted.

   c) Development shall not be permitted on lands subject to bank instability, landslides or subsidence.

   d) All structures and services shall be protected against damage and shall be functional under hazard conditions.

2. Notwithstanding (1) development will not be permitted if, as a result of the development;

   a) There is an added risk to life or safety, or

   b) Water flow, flow velocities or stages are adversely altered, obstructed or increased.

3. Activities such as dumping, excavation, clearing, cultivation, or excessive grazing which would accelerate or promote dangerous erosion or bank instability will be prohibited.

4. In areas where the specific hazard has not been defined, permanent structures shall be set back from all waterways a distance of at least 10 times the height of the bank above channel grade or 60 metres whichever is greater unless an engineering investigation shows that these limits may be reduced.

5. The Board shall support the policies and programs of the Turtle Mountain Conservation District regarding water and related resources within the planning district.

IV. IMPLEMENTATION

The policies shall be implemented by means of, variously, zoning by-laws, conditions of subdivision approval, the issuance of development permits and building permits, development agreements and such programs as are determined from time to time by the Board or Councils to be necessary and not in conflict with any part of the Plan.

WILDLIFE RESOURCES

I. PRESENT CONDITIONS/INTRODUCTION

The Planning District is characterized by the most prominent relief feature in southwestern Manitoba - the Turtle Mountain - which straddles the Canada-U.S. border for 40 miles. The Turtle Mountain upland, consisting of the Turtle Mountain and Mountainside Escarpment, is located mostly in this District. Morainic Hills with numerous depressions, shallow lakes and potholes comprise the top portion of the mountain. Largely forested, the Turtle Mountain proper includes a portion of the Turtle Mountain Provincial Park, a few parcels of crown land and private land.

The Mountainside Escarpment occurs in the lower (north) slopes of the mountain, terrain of smooth to gently rolling slopes cut by deep ravines. The area is naturally a grassland and grassland-forest-transition area, much of which is now cultivated or under pasture. The slopes grade into the adjacent Boissevain Plain at lower elevations.

The Whitewater Lake Basin contains Whitewater lake, a large shallow saline lake to the north of P.T.H. #3 between Boissevain and Deloraine. Soils in the Basin are imperfectly and poorly drained due to high water table. Most of the stream channels from the escarpment are ephemeral as they approach Whitewater Lake, flowing after spring thaw and heavy summer rains.

North of the escarpment and to the north and east of Whitewater Lake lies the Boissevain Plain, characterized by open, gently rolling landscape, largely under cultivation or pasture and periodically dotted with potholes and small bluffs. In this area soils are highly rated for agriculture with the bulk of land given a Class 2 or 3 C.L.I. Around Whitewater Lake the C.L.I. rating drops to Classes 4 and 5 with severe limitations due to wetness and salinity.

Southward toward the Turtle Mountain, soil limitations for agriculture become more restrictive, ranging from a complex of Classes 2, 3 and 5 on the mountainside escarpment to a complex of Class 4, 5 and 7 on Turtle Mountain itself. In the southern, higher portion of the District, the major limitations to agriculture are topography, wetness or inundation.

In the District, the Turtle Mountain and the escarpment are by far the most valuable areas for wildlife, particularly deer and waterfowl. The forested Provincial Park and private lands have the greatest potential for wildlife production, whereas on the better soils to the north of the mountain, wildlife habitat is confined largely to small bluff and pothole types of habitat, which are becoming less abundant each year.

Wildlife Populations

Population figures for all species of wildlife are unavailable for the District since few recent aerial surveys have been conducted in the area.

White-tailed Deer

Canada Land Inventory ungulate capability maps for this area indicate that approximately 3/4 of a township of land is rated Class 1w for winter range for

deer and elk (Map 7). Townships comprising the western end of the Turtle Mountain upland are rated Class 2 for moose, deer and elk. Approximately one quarter of a township, in a narrow band along the escarpment, is rated as Class 4. The broad area around Whitewater Lake and the flat rolling area to the north and west of Deloraine is rated low for deer with the remainder of the District in Classes 5 and 6. In spite of the low capability ratings in some of the flatter areas, small bluffs and potholes and uncleared pasture are comparatively good habitat for deer, simply because little tree cover remains otherwise. Summer range for deer occurs all over the District in spite of intensive agriculture, but winter range is confined to those areas with forest cover, largely on the escarpment and in the Turtle Mountain upland. In some years, when emergent vegetation such as cattail and reeds are plentiful on the edge of Whitewater Lake, deer commonly overwinter around the lake. Deer populations on the plains are probably small due to the limited amount of habitat available. On the escarpment and in the mountain, however, populations should be good to excellent.

Moose

Moose are relative newcomers to this District, at least in any numbers. Although observed only infrequently up to 10 to 15 years ago, within the last 5 to 10 years moose have become a permanent addition to the fauna of the Turtle Mountain and Community Pasture. Most or all of these animals have emigrated into this region from North Dakota. In 1985, a winter aerial survey flown over the entire Turtle Mountain observed 150 moose. No population estimate was projected from that count but by later winter of 1986/87, this may be accomplished. There is no doubt that the moose herd in this District and the R.M. of Morton is healthy and growing.

Elk

Although elk are periodically reported in the Turtle Mountain area of the District there is no evidence to suggest that elk have become established and are reproducing. However, historical records indicate that elk were a common ungulate in this part of Manitoba.

Waterfowl and Wetlands

The most productive area rated for waterfowl is a small part of the District along its northern and western borders (Map 6). This area is largely a bluff area with potholes much less than 40 acres in size. In the aggregate they have the potential for good waterfowl production. The majority of the Turtle Mountain upland area is rated as Class 3S, important not only for production but also as a migration stopping area for ducks.

Most of the remainder of the District is rated poor for waterfowl production. The most notable waterfowl area is Whitewater Lake, not for its capacity to produce ducks but for its importance as a migration stop or staging area. Within the last 10 years, goose numbers have increased dramatically so that peak numbers of snow and blue geese now reach 200,000 birds annually with 10-20,000 Canadas also using the lake during fall. Duck numbers in September and October vary but in the last few years have seldom exceeded 20,000 birds, most of which are mallards. With the exception of Whitewater Lake, and the Deloraine Reservoir southeast of Deloraine, there are no other waterbodies

exceeding 40 acres on the Boissevain Plain.

There are numerous lakes in the Turtle Mountain upland and escarpment which exceed 40 acres in size.

There are no confirmed records of geese nesting either in the Turtle Mountain or on the plains, thus most waterfowl production is of ducks.

Furbearers

Furbearers are found throughout the District. Most of the suitable habitat is on the escarpment or in the Turtle Mountain upland and aquatic furbearers such as beaver and muskrat are common here, as well as mink and weasel. Coyotes, red fox, squirrel, raccoons and badger are found all over the District, particularly on the Turtle Mountain and in the pockets of habitat on the plains.

Non-Game Species

Although the exact status of the species is unknown, the Western Painted Turtle is the most noteworthy non-game species that occurs in the District, principally within the Turtle Mountain and escarpment areas. The turtle is a common sight along roads and trails in the upland and escarpment and on the shorelines of the many lakes, sloughs and potholes. Parks Branch has recently indicated in their Master Plan for the area that this reptile will be studied in future.

The red necked grebe has been studied in the Provincial Park and is considered to be a significant nesting species on several lakes within the Park. Protection from disturbance may be given to this species on several lakes within the Park under the Parks Branch Master Plan. The piping plover, a rare shorebird, has recently been noted on Whitewater Lake and is believed to be nesting on the northern shore of the lake. One active great blue heron rookery in the Turtle Mountain Park has been noted. As encroachment on treed or pasture areas continues, as well as escalated drainage of sloughs and potholes, valuable habitat for a broad spectrum of wildlife is lost. The capacity of the District to produce and support wildlife is in direct relationship to how much habitat remains.

Order-in-Council Wildlife Lands

The Planning District has portions of the Whitewater Lake Public Shooting Ground and the Whitewater Lake W.M.A. The W.M.A. is described as the waters of Whitewater Lake, which are variable, dependent on yearly rainfall and runoff and evaporation. At present the W.M.A., by this definition, is smaller than in the mid and late 1970's.

The Public Shooting Grounds are difficult to define since there is apparently some shoreline of the lake on the north, west and south sides which technically belong to the Crown and are legally P.S.G. On the east end of the lake, the shorelines are not definite but include a fairly good sized block of Crown land. The Surveys branch of Manitoba Natural Resources has completed a survey of the area which has defined on a map the location of private and Crown land. This survey will aid in defining the P.S.G., the W.M.A. and private land both on a map and on the ground.

There are four quarters of upland W.M.A. in the District, located on the N? 29 - 1 - 22W. and the NE 11 and NW 14 - 1 - 23W. The four quarters are completely covered with a variety of shrub and tree growth which constitute excellent wildlife habitat.

Wildlife Projects

Ducks Unlimited has two projects in the District, listed below by legal description. D.U. is also doing a feasibility study on Whitewater Lake, but at present it is not known what will be the outcome of their investigations.

Ducks Unlimited projects in Del-win Planning District:

Caswell	NW 20 - 1 - 22W
Rolston	SW 4 - 1 - 22W

Wildlife Issues

The most important wildlife-related issue in this District is waterfowl depredation of cereal crops. Crops are normally harvested by the time that large numbers of geese and ducks congregate on the lakes in the District, so that the problem is usually minimal. When harvest is delayed, however, depredation on crops can be a serious threat for a large area around Whitewater Lake.

Flooding due to beaver activity is not serious but it does occur occasionally along highways and roads or on private land, and is remedied by regional staff, highways department or municipal staff.

Deer damage to forage or grain is minimal and complaints have not been increasing; field staff can prevent damage if the affected farmer does not wish to claim compensation for losses.

Over the last four or five years, because of the high migrant goose population traversing the District in September and October, there has been a major influx of American waterfowl hunters to this area. Consequently, local hunters and municipal officials are objecting to:

1) having to compete with so many non-residents,

2) non-residents hunting extensively for upland birds which are currently in the low part of their population cycle, and,

3) the damage caused to municipal roads and trails during inclement weather by hunters.

These problems are being addressed by the Wildlife Branch and may result in hunting seasons that are more restrictive to the non-resident.

The issue of disappearing wildlife habitat continues to be of prime concern in this District. Bulldozing of bluffs and pastures and drainage of potholes and sloughs continues to escalate here as in other parts of southern Manitoba. This decline in habitat will result in a decline in the number and variety of wildlife species, from songbirds to deer.

Recreational Aspects of Wildlife

The most notable use of wildlife is by recreational hunters, principally for waterfowl and for deer. In the Park, wildlife viewing is encouraged and will likely be augmented in future by Parks Branch development, particularly for moose and beaver. Spring and fall staging of waterfowl attract a number of local and non-local people who view and photograph geese which congregate on farm fields or Whitewater Lake. The variety of waterfowl and shorebirds using Whitewater Lake could be a big drawing card to bird watchers, but as yet this area has not attracted many people for this pursuit.

II. CONCERNS/OBJECTIVES

The following objectives and policies are suggested for consideration by the Board of the District:

1. To maintain wildlife populations at existing levels, particularly on poorer quality land.

2. To promote all forms of wildlife use within the Turtle Mountain Provincial Park: trapping, hunting for grouse, deer or waterfowl, and wildlife viewing.

3. To promote programs and legislation to maintain wildlife habitat on private land, unused road allowances and Crown land.

4. To promote communication and cooperation between people and agencies, the Planning District, government departments, Ducks Unlimited (Canada), etc., so as to achieve an active program of conservation of habitat and wildlife resources within the District.

III. POLICIES/GUIDELINES

1. The Board of the District should protect from clearing of shrub or tree cover, all lands with an agricultural capability of Class 4, 5 or 6.

2. Whitewater Lake should be protected from drainage, and from excessive or deleterious agricultural use on its periphery.

3. Rural subdivisions and industrial developments in the vicinity of Whitewater Lake (anywhere within the area flooded in 1976) should be discouraged by the Board.

4. Development of Whitewater Lake to achieve its potential for waterfowl production and to hold and maintain fall concentrations of geese and ducks should be encouraged by the Board through agencies willing to undertake a project of this nature. Development of an interpretive center for viewing and study of all wildlife on Whitewater Lake would be a distinct asset.

5. Areas prone to waterfowl or deer depredation should be recognized and landowners encouraged to seek assistance or advice from Manitoba Natural Resources in our attempt to minimize or reduce losses.

IV. IMPLEMENTATION

The objectives and policies of the District with respect to land use and wildlife resources should be implemented as follows:

1. By assistance and advice on conservation practices by staff of Manitoba Natural Resources, Manitoba Agriculture and the Turtle Mountain Conservation District.

2. By public and private cooperation through management and development agreements.

3. By the Municipal Councils and Planning District Board through the judicious use of restrictive zoning bylaws, subdivision control procedures and the issuance of development permits.

CROWN LANDS

INTRODUCTION

This section describes the Crown lands in the Planning District, providing an inventory of Crown lands and present commitments. Additionally, this section will discuss the authority for Crown lands, the legal aspects thereof and the planning and administration of Crown land.

DEFINITION

Crown land, for the purposes of this section, is defined as all land under Order-in-Council designated as; Provincial Park, Provincial Forest, Ecological Reserve, Wildlife Management Area, and Community Pasture, plus all other land administered by Manitoba Natural Resources and Manitoba Agriculture under 'The Crown Lands Act'. In addition, all waterbodies, streams, rivers, and creeks are considered Crown lands except where original title has confirmed the lake bed or stream bed to an individual.

ACTS AFFECTING CROWN LANDS

There are a variety of acts which affect the administration and management of Crown lands. For the purposes here, the principal acts which govern use and management of these lands are:

1. The Crown Lands Act,
2. The Fisheries Act,
3. The Forest Act,
4. The Provincial Parks Lands Act,
5. The Water Power Act,
6. The Rivers and Streams Act,
7. The Wildlife Act, and
8. The Water Resources Administration Act.

MANAGEMENT AND ADMINISTRATRION OF CROWN LAND

The actual management and administration of Crown land is split between two Departments of Government, Manitoba Natural Resources and Manitoba Agriculture. Agricultural Crown Lands has been assigned the functions and related administration pertaining to the issuance of agricultural leases and permits of occupation or use of those Crown lands which are designated as:

1. primarily agricultural lands, and

2. designated as multiple use lands which may only be used for agricultural purposes on an interim or secondary basis, subject to specific conditions and convenants required by other resource users.

The principle responsibility for Crown land remains with Manitoba Natural Resources, which administers The Crown Lands Act excepting those specific sections under the responsibility of the Minister of Agriculture.

The Minister of Natural Resources is responsible for administration, direction and control of the surveys of Crown Lands. Survey monuments defining Township, Section and Quarter Section corners have been established throughout the Planning District.

The protection of the township survey fabric, the primary function of which is to support the transferring of rights in land via the Real Property Act or The Crown Lands Act, is essential to efficient and effective land administration. No system, purporting to give evidence of the ownership of land is complete if one cannot determine what land is being conveyed or where its boundaries are located. Boundaries, once defined, are a matter of law and the survey monument is the vital link between the ground and the administrative record.

CROWN LAND CLASSIFICATION AND PLANNING

Crown land is exempt from The Planning Act and is under the jurisdiction of the Manitoba Government as governed by the various acts of the Legislature mentioned above.

The classifying to use of Crown land in the southern portion of the Province is the responsibility of the Crown Land Classification Committee, (CLCC). This is an Interdepartmental Committee with representation from Manitoba Agriculture, Northern Affairs, Natural Resources and Municipal Affairs. The CLCC reports to and receives their direction from the Provincial Lands Use Committee of Cabinet.

In carrying out this responsibility, the CLCC has established Bloc Planning Committees (BPC's). These BPC's have regional representatives from Manitoba Agriculture, Natural Resources and Municipal Affairs. The BPC's provide field recommendations, in effect, providing to the CLCC preliminary land use plans for their consideration of Crown lands. They are not, however, final plans. The Crown Land Classification Committee requires that all such plans must be reviewed and commented on by Local Councils and/or Planning District Boards. It is only after such review and appropriate adjustment if necessary, that a final Crown land plan is prepared.

INVENTORY

In the Planning District there are approximately 7087 hectares of Crown land, representing approximately nine percent of the land base in the District. (Map 8, Table 3)

PRESENT COMMITMENTS

The Crown land in the District is chiefly committed by Order-in-Council for use as Wildlife Management Areas and Public Shooting Grounds (61 percent of the Crown land in this District) and Provincial Park and Provincial Forest (36 percent). Smaller areas are under agricultural disposition in the form of Forage Leases and Renewable Hay Permit, the latter located inside the Public Shooting Ground.

One General Permit has been issued in the District, for a residence. Two small parcels, totalling about two hectares, are not committed to any use.

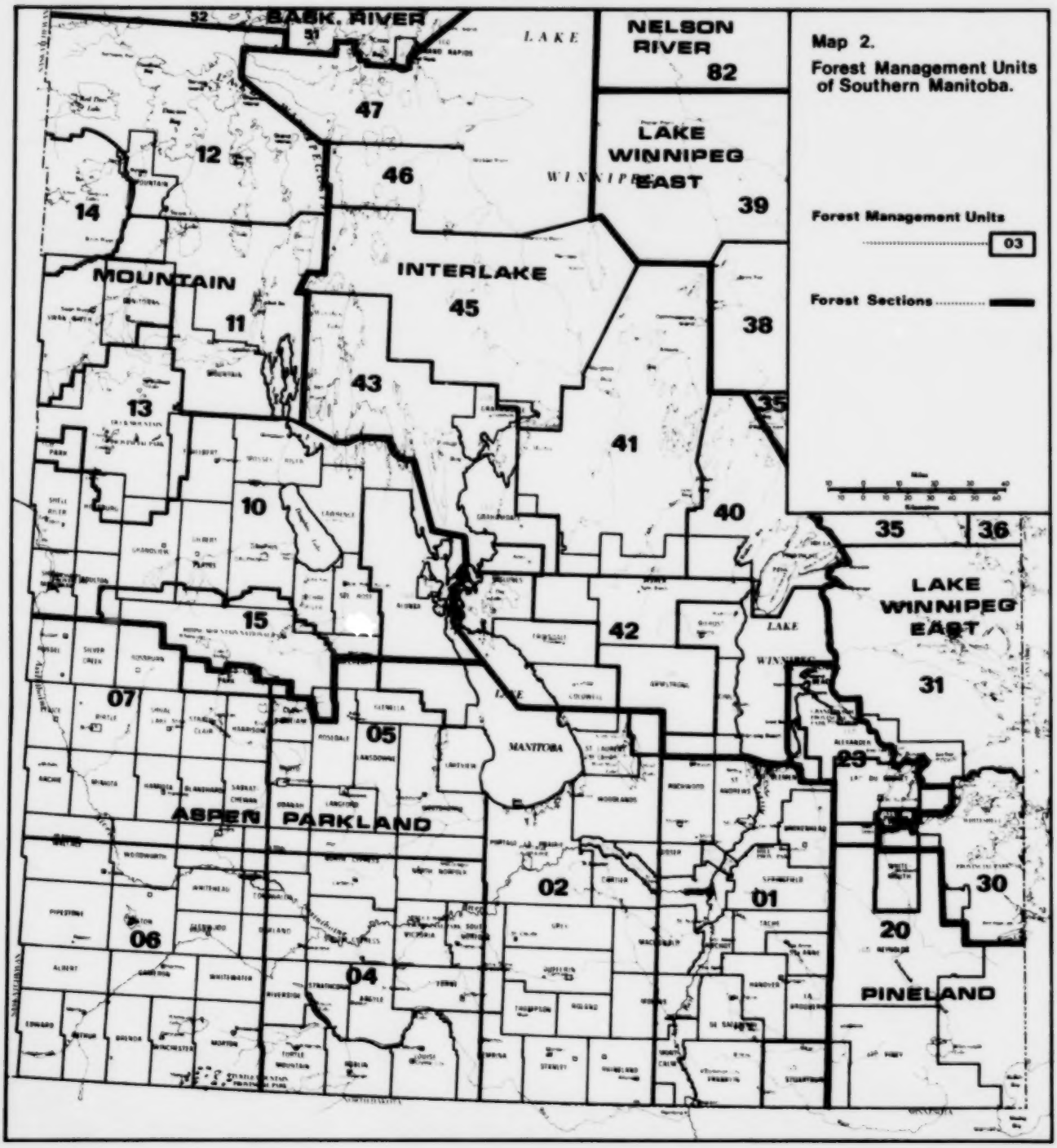
The Turtle Mountain Wildlife Management Area occupies four quarter-sections of heavily-treed land on the escarpment of the Turtle Mountain, to provide habitat, primarily for deer and ruffed grouse.

Whitewater Lake Public Shooting Grounds was established in 1925 to include most of the Lake and its islands, to which adjacent Crown lands were added subsequently. A small part of this area is allowed for Renewable Hay permits. Whitewater Lake Wildlife Management Area was declared over the waters of the lake in 1972 in order to prevent hunting and harassment of waterfowl by boats. The borderline of the lake, and therefore of the W.M.A., has varied widely over the years due to fluctuations in the water level, as the lake is very shallow. A special survey was conducted by Manitoba Natural Resources in 1983 to establish the lake's current ordinary high water mark.

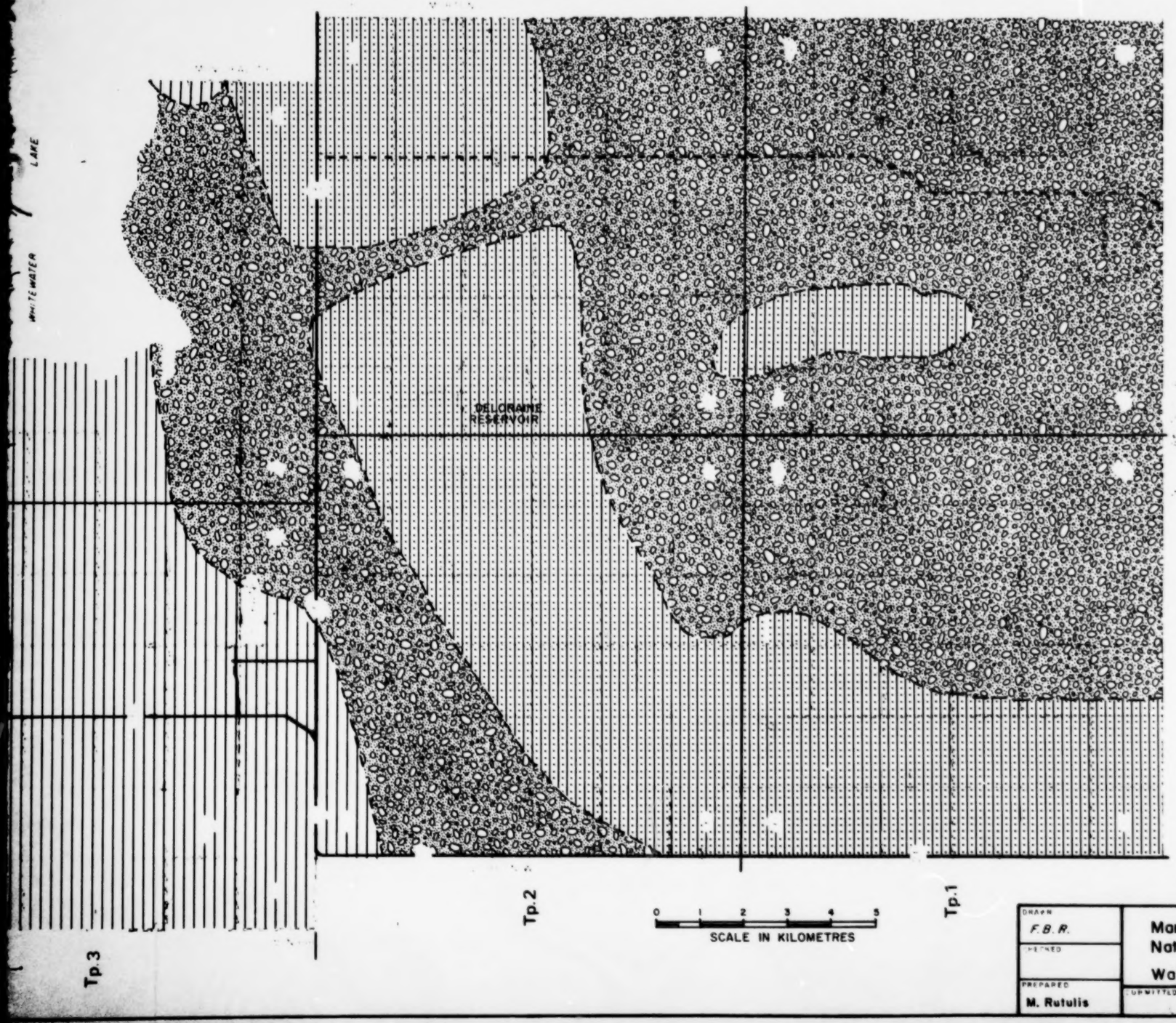
Turtle Mountain Provincial Forest and Provincial Park conserve the rough lands on the upper portion of this highland for forestry and recreational purposes. The Forest consists chiefly of mature and over-mature stands of hardwoods, principally poplar and birch. Although considered to be of primary forest value, this forest has in recent decades suffered from under-use, due to the lack of demand for poplar. Relict stands of oak of exceptional age occur on some islands. The usefulness of the area for use as a Provincial Park derives from the combination of its rough topography, wooded vegetation, and the approximately 400 waterbodies, ranging in size from small potholes to several hundred acres. The small part of the Provincial Park which falls within the Planning District does not contain any of its major facilities: in the District are located a scout camp and portions of trails and Registered Trap Lines. The management plan for the Park designates the northern third of this part of the Park as Commercial Resource/Recreation Zone, the land around Sharpe Lake as Recreation Zone, and the area to the east and south of this as Backcountry Zone. No developments are planned for this part of the Park.

Table 3. Crown Lands and Crown Land Commitments in the Del-Win Planning District (July, 1986).

Commitment Type	Number	Area (hectares)
1. Order-in-Council		
Public Shooting Grounds and Wildlife Management Area	1 2	4297.17
Provincial Park and Provincial Forest	1 1	2788.11
2. Agricultural		
Forage Leases	2	260.00
Renewable Hay Permit	1	53.14
3. Other		
General Permit	1	---
Uncommitted Parcels	2	1.82
Total Crown Lands		7087.10


BASK. RIVER
NELSON RIVER
82
LAKE WINNIPEG EAST
39
INTERLAKE
45
MOUNTAIN
11
12
14
47
46
43
13
10
15
41
40
38
35
36
42
07
05
06
04
02
01
31
30
20
ASPEN PARKLAND
PINELAND
MANITOBA
Map 2.
Forest Management Units of Southern Manitoba.
Forest Management Units
03
Forest Sections

Tp.4
WHITEWATER
LAKE
N
Tp.3



LEGEND

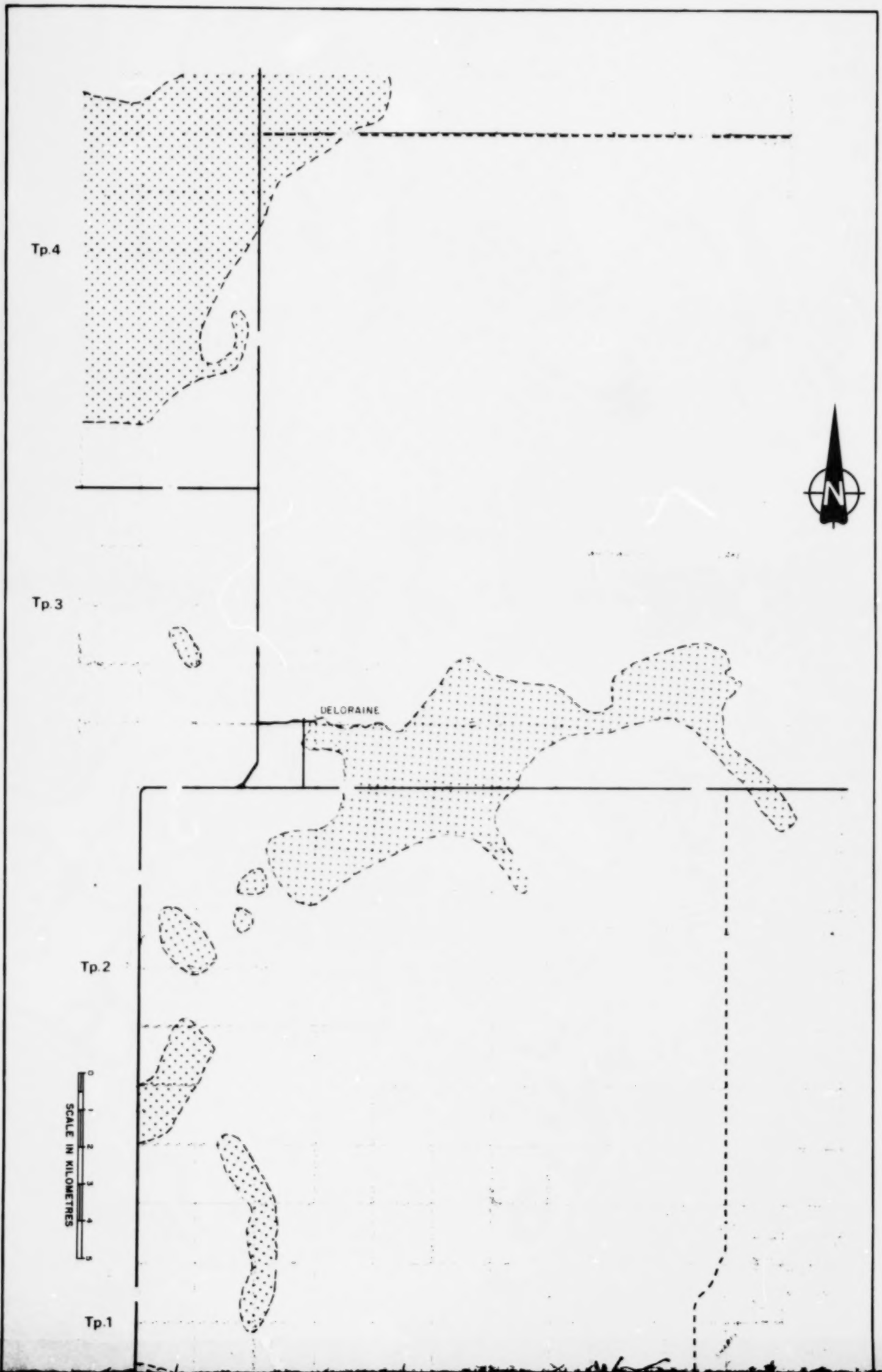
- SAND AND GRAVEL: Mainly isolated lenses of sand and gravel interbedded in till and other surficial deposits. Depth to the aquifers ranges from a few metres to more 100m (5-330ft.). Well yield generally is in the 0.1 L/s to 1.0 L/s range (1-13 I.G.P.M.) but may be up to 10 L/s (130 I.G.P.M.) at some locations. Water quality is fair to very poor in the lowland area and fair to good in the upland (southern) area.

- SANDSTONE AND SAND: Extensive sandstone and sand layers in bedrock formations. Depth to the aquifer ranges from less than 5m to more than 100m (15 to more than 330 ft.). Well yield in general in the 0.1 L/s to 0.5 L/s range (1-7 I.G.P.M.). Maximum yield may exceed 2.0 L/s (25 I.G.P.M.) at a few locations. Water quality generally fair to good. High iron concentration is a common problem. Sand and gravel aquifers may occur above the sandstone aquifer.

- SHALE: Fractured zones in shale bedrock. Depth to the aquifers usually more than 20m (65ft.). Well yield commonly less than 0.5L/s (5 I.G.P.M.). In most of the area water in the shale is salty or of very poor quality. In general, quality decreases with depth. A few sand and gravel aquifers may occur above the shale bedrock.

MAP 3

DRAWN F.B.R.	Manitoba Natural Resources Water Resources	DEL-WIN PLANNING DISTRICT
CHECKED		AQUIFERS
PREPARED M. Rutulis	SUBMITTED	APPROVED
	SCALE AS SHOWN	DATE 86 08 11
	SHEET OF	FILE NO. 90-1-7-1134


Tp.4
Tp.3
DELORAINE
Tp.2
Tp.1
N
SCALE IN KILOMETRES
0
1
2
3
4
5

LEGEND

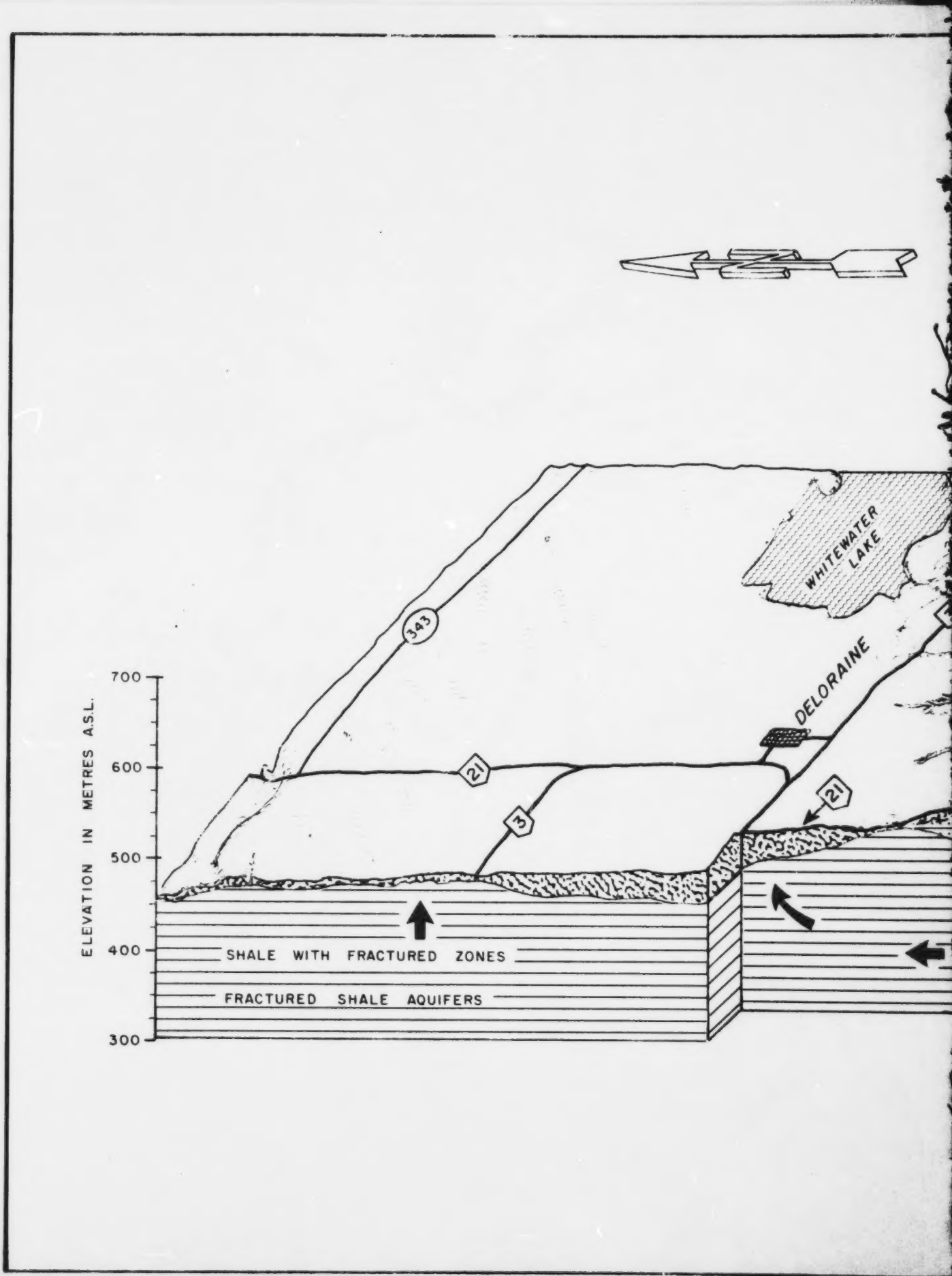
– GROUNDWATER POLLUTION HAZARD AREA

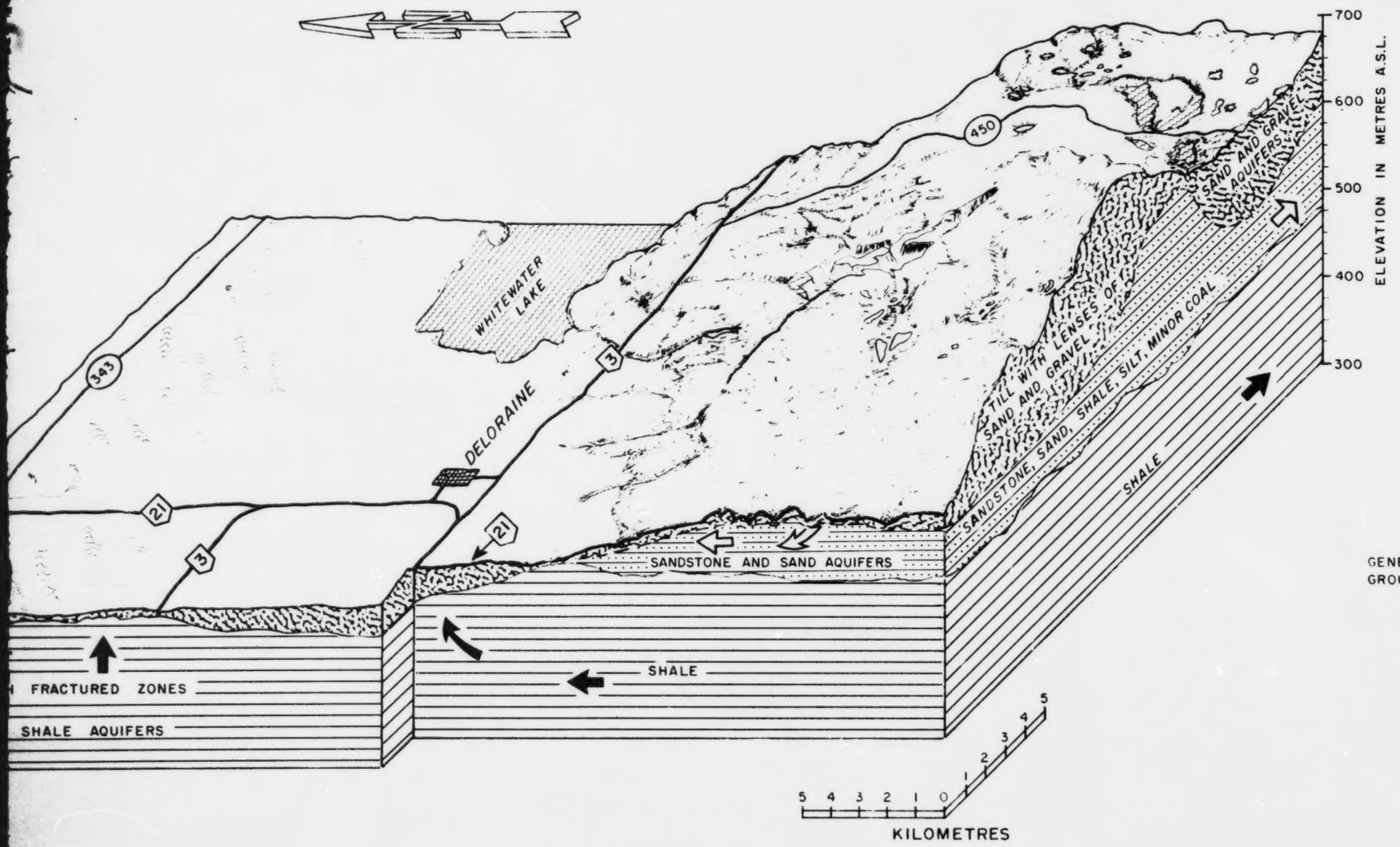
(Areas where shallow aquifers subject to pollution by infiltration of pollutants from surface may exist)

AFTER: MANITOBA WATER RESOURCES BRANCH, 1983
GROUNDWATER POLLUTION HAZARD MAP, VIRDEN AREA MANITOBA

MAP 4

DRAWN: F B R	Manitoba Natural Resources Water Resources	DEL-WIN PLANNING DISTRICT
PREPARED: M. Rutulis	SUBMITTED:	APPROVED:
		GROUNDWATER POLLUTION HAZARD MAP
	SCALE: AS SHOWN	DATE: 86 08 11
	SHEET: OF	FILE NO: 90-1-7-1134


WHITEWATER LAKE
343
DELORAINE
21
3
21
700
600
500
400
300
ELEVATION IN METRES A.S.L.
SHALE WITH FRACTURED ZONES
FRACTURED SHALE AQUIFERS



LEGEND

GENERAL DIRECTION OF GROUNDWATER FLOW

FRESH WATER

SALINE WATER

FIGURE 1

DRAWN F. B. R.	Manitoba Natural Resources — Water Resources	DEL-WIN PLANNING DISTRICT
CHECKED		**TOPOGRAPHIC AND SUBSURFACE FEATURES**
PREPARED M. Rutulis	SUBMITTED / APPROVED	SCALE AS SHOWN · DATE 86 08 11 · SHEET OF · FILE NO 90-1-7-1134

MUNICIPALITY OF CAMERON

Tp.4

Tp.3

b. WHITEWATER LAKE

BRENDA

DELORAINE

MUNICIPALITY

CPR

Regent

343

21

3

31

36

6

b. WHITEWATER LAKE

Tp.3

Tp.2

Tp.1

DELORAINE

BRENDA

MUNICIPALITY OF BRENDA

MUNICIPALITY OF MORTON

CPR

CNR

WATER PIPE LINE

Turtlehead Creek

(ABANDONED)

(ABANDONED)

P.R. No.60

PARTRIDGE

FLOSSIE

1

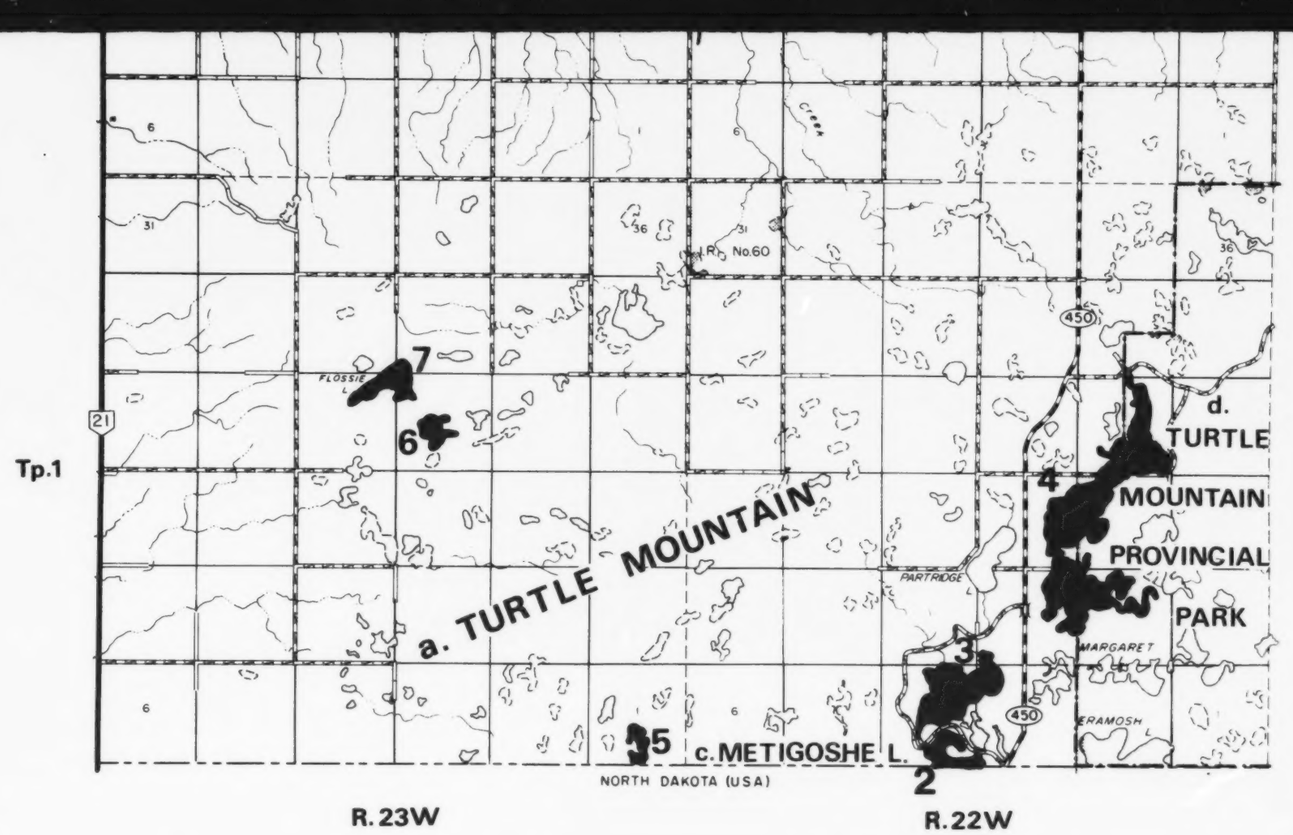
6

7

4

d. TURTLE MOUNTAIN PROVINCIAL

TLE MOUNTAIN



Map 1.
Fisheries Habitat and Recreational Features

Fisheries Habitat.....■

1 Deloraine Reservoir
2 Metigoshe Lake
3 Dromore Lake
4 Sharpe Lake
5 Steeprock Lake
6 Goldie Lake
7 Flossie Lake

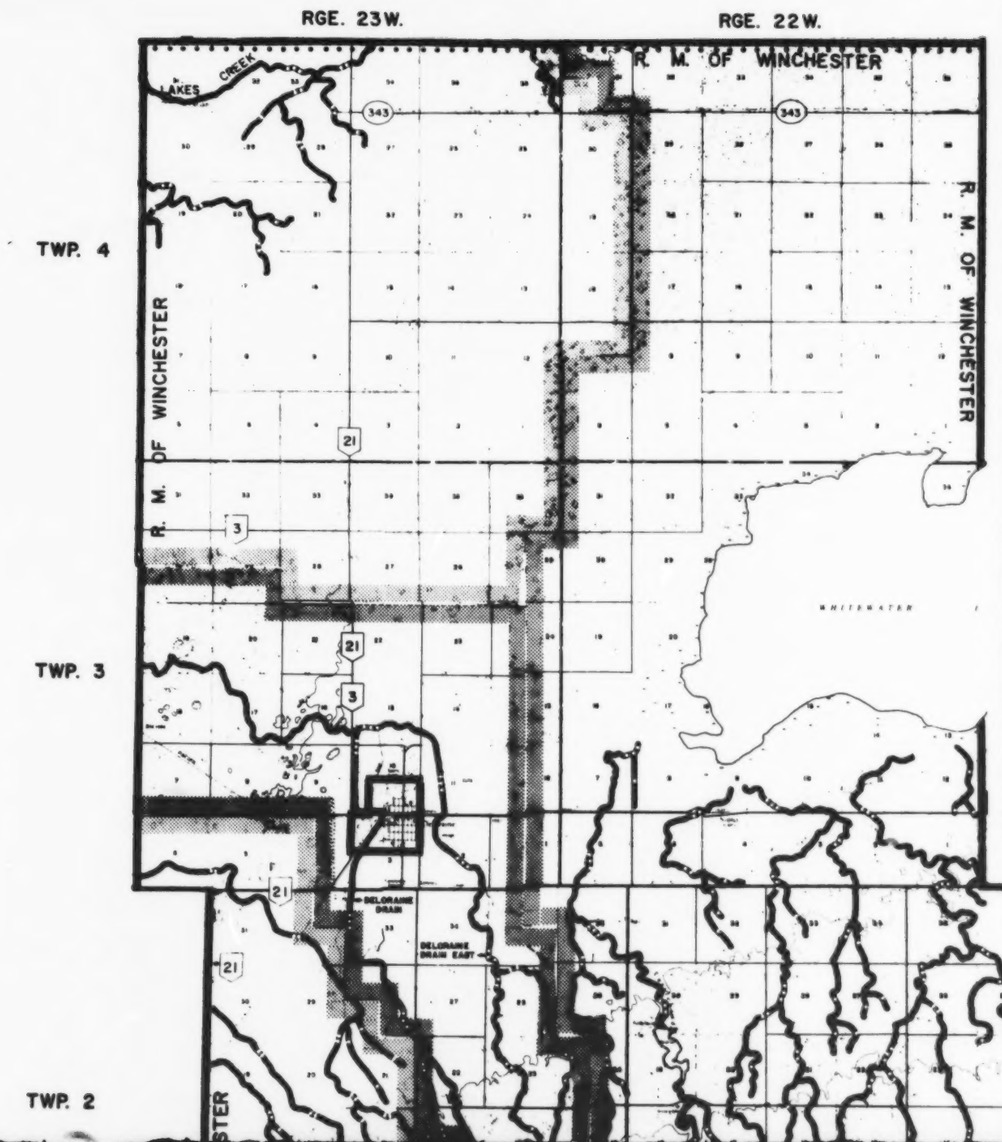
Recreational Features

a Turtle Mountain
b Whitewater Lake
c Metigoshe Lake
d Turtle Mountain Provincial Park

DEL~WIN PLANNING DISTRICT

1 0 1 2 3 4 5 mi.
1 0 1 2 3 4 5 6 7 8 km

Map 5.
Surface Drainage Systems



LEGEND

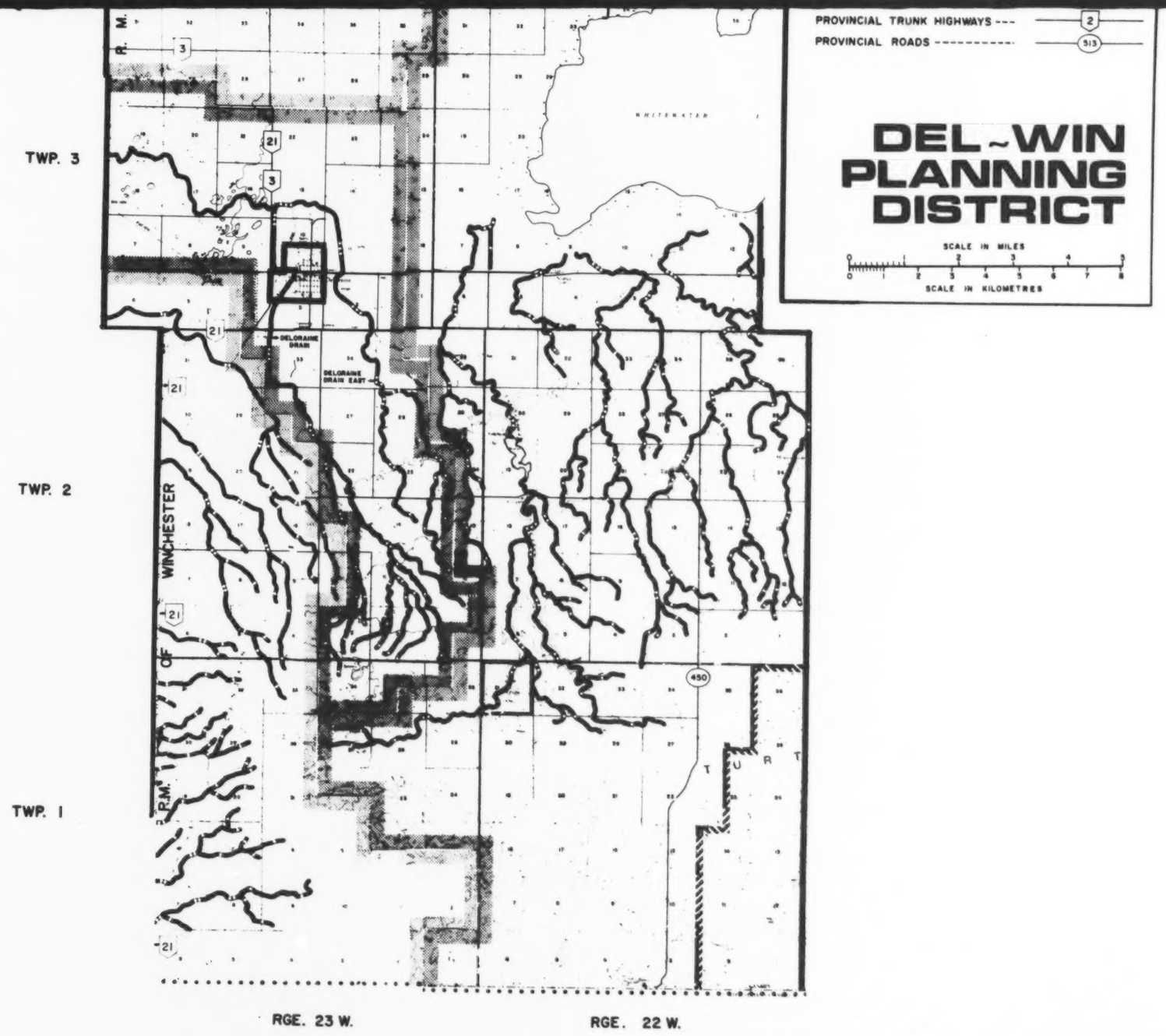
WATER COURSE
- 1st ORDER DRAINS
- 2nd ORDER DRAINS
- 3rd ORDER DRAINS
- 4th ORDER DRAINS
- 5th ORDER DRAINS
- 6th ORDER DRAINS
- 7th ORDER DRAINS

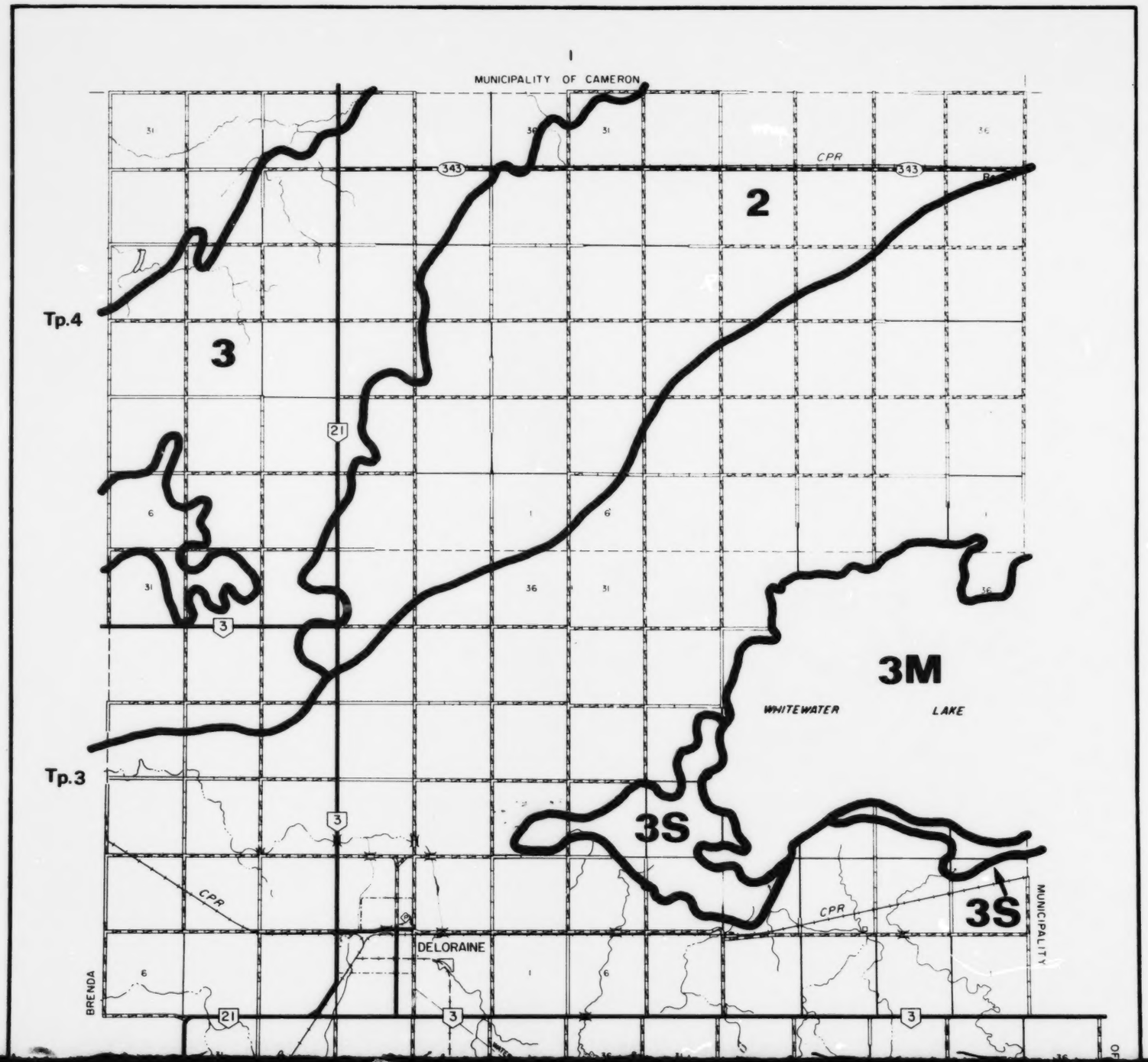
CONSERVATION DISTRICT BOUNDARY
LIMITS OF DRAINAGE AREA
CITY, TOWN AND MUNICIPAL BOUNDARIES
PROVINCIAL TRUNK HIGHWAYS (2)
PROVINCIAL ROADS (513)

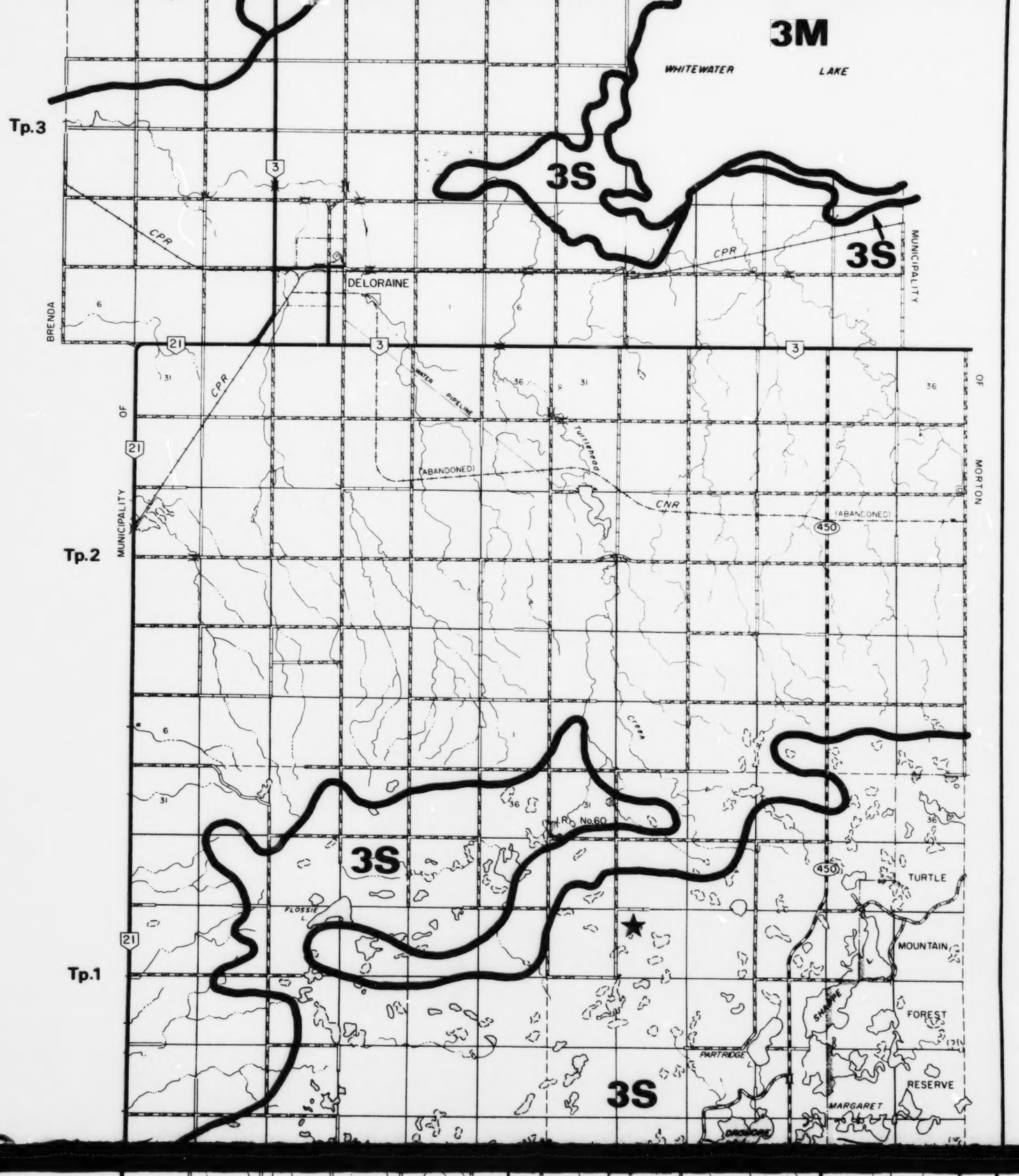
DEL~WIN PLANNING DISTRICT

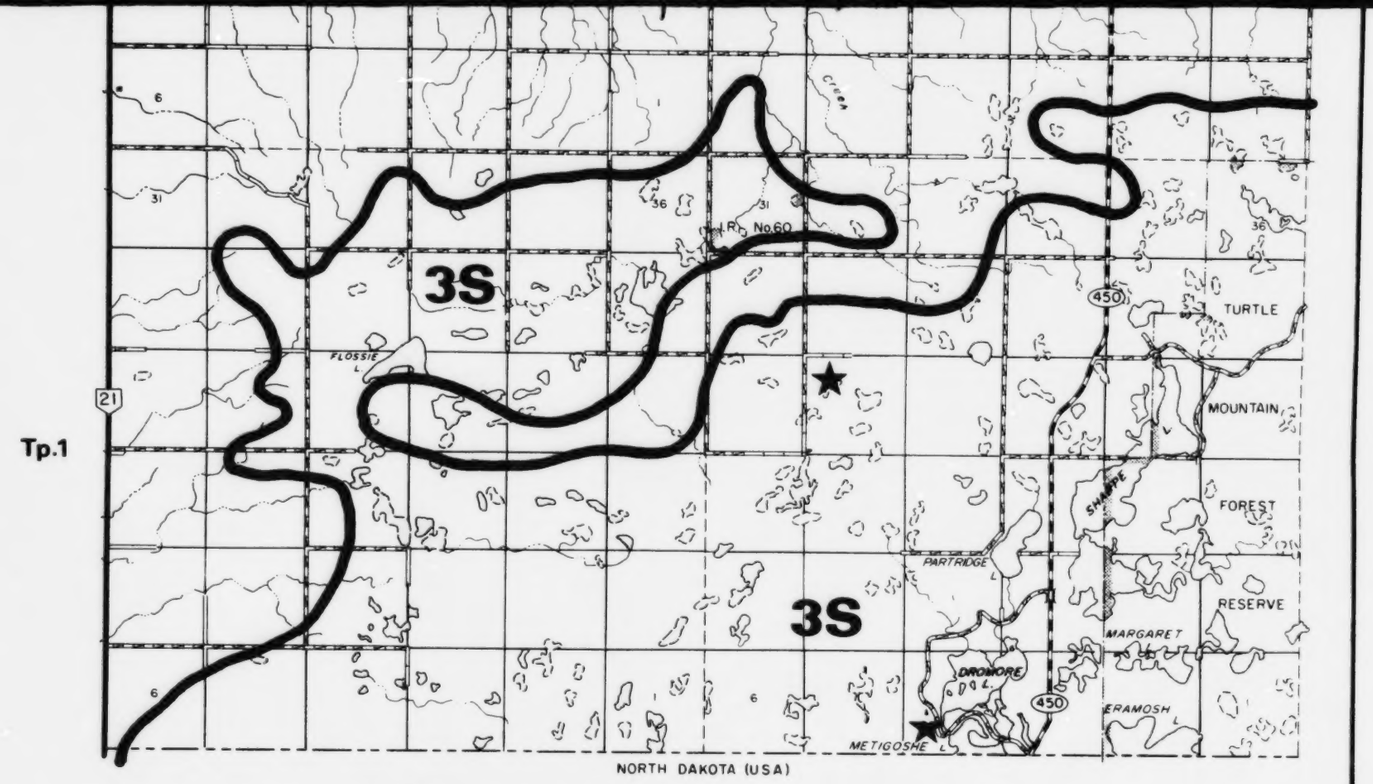
SCALE IN MILES
0 1 2 3 4 5

SCALE IN KILOMETRES
0 1 2 3 4 5 6 7 8


PROVINCIAL TRUNK HIGHWAYS
PROVINCIAL ROADS
DEL~WIN PLANNING DISTRICT
SCALE IN MILES
SCALE IN KILOMETRES
TWP. 3
TWP. 2
TWP. 1
RGE. 23 W.
RGE. 22 W.
R.M. OF WINCHESTER
DELORAINE DRAIN
DELORAINE DRAIN EAST
WHITEWATER
TURTLE MOUNTAIN


MUNICIPALITY OF CAMERON
CPR
343
2
Tp.4
3
21
3
3M
WHITEWATER
LAKE
Tp.3
3S
3S
CPR
CPR
DELORAINE
BRENDA
MUNICIPALITY
3
21
3
3


3M
WHITEWATER
LAKE
3S
3S
Tp.3
Tp.2
Tp.1
DELORAINE
BRENDA
MUNICIPALITY
OF
MORTON
MUNICIPALITY
OF
CPR
CPR
CPR
CNR
WATER PIPELINE
(ABANDONED)
(ABANDONED)
Turtlehead
P.R. No.60
FLOSSIE
PARTRIDGE
SHARPE
TURTLE
MOUNTAIN
FOREST
RESERVE
MARGARET
3
21
450
6
31
36



Tp.1

R.23W

R.22W

Map 6
Waterfowl Capability[1] and Ducks Unlimited Projects.

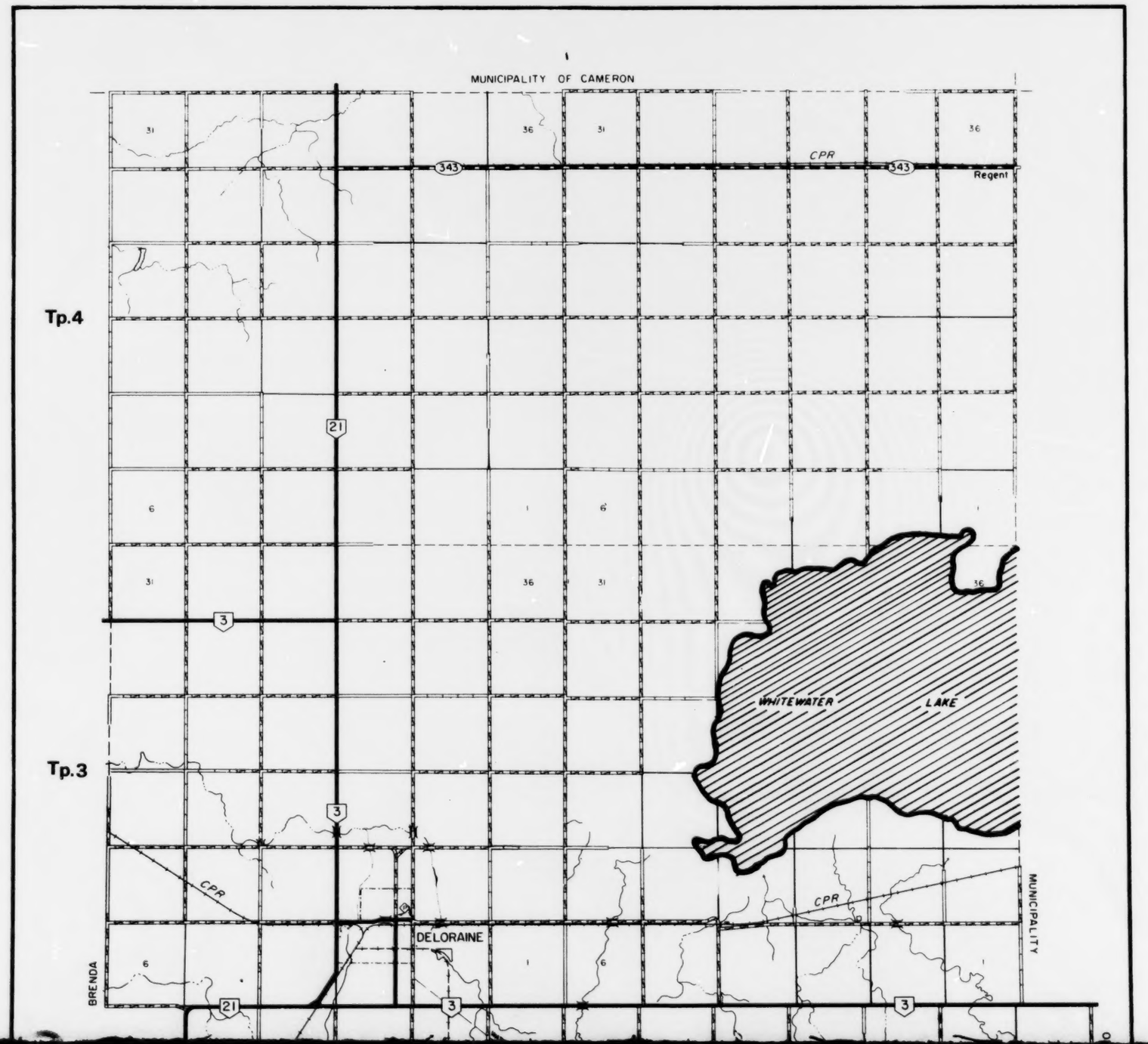
Waterfowl Capability[1] (Classes 2, 3, 3S & 3M) 3

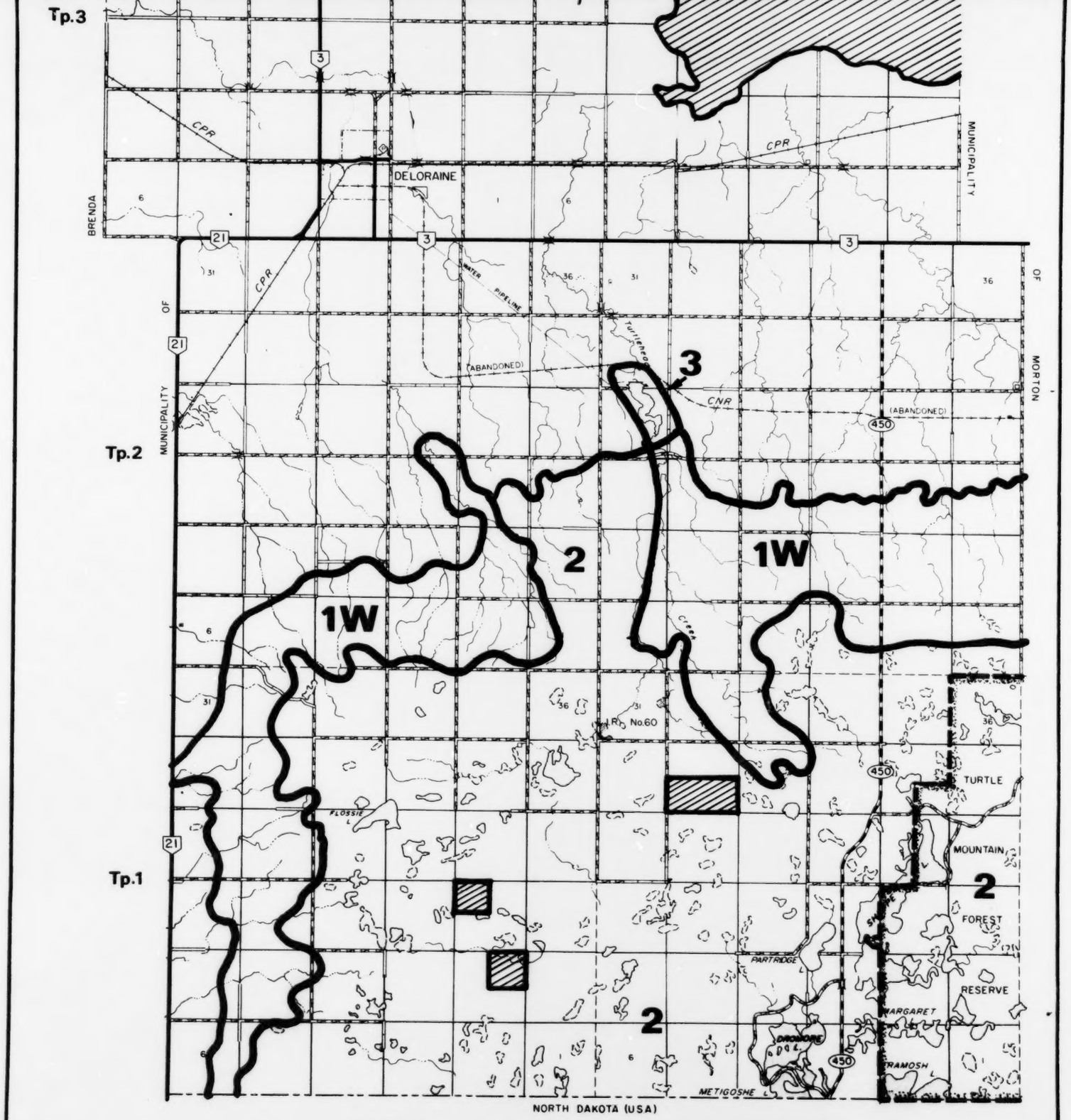
Ducks Unlimited Project ..... ★

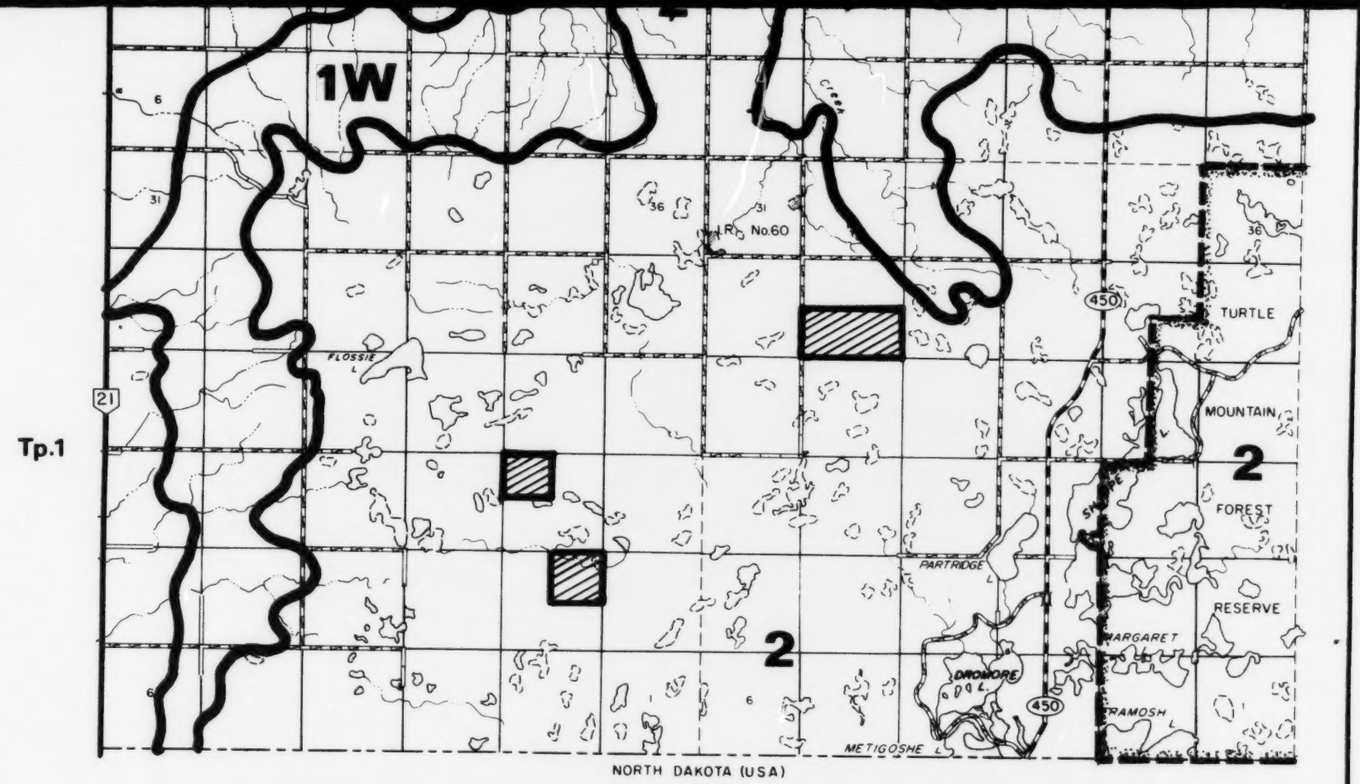
[1] Canada Land Inventory Classifications

DEL~WIN PLANNING DISTRICT

1 0 1 2 3 4 5 mi.
1 0 1 2 3 4 5 6 7 8 km


MUNICIPALITY OF CAMERON
31
36
31
36
CPR
343
343
Regent
Tp.4
21
6
1
6
31
36
31
36
3
WHITEWATER
LAKE
Tp.3
3
CPR
CPR
DELORAINE
BRENDA
MUNICIPALITY
6
1
6
21
3
3


Tp.3
Tp.2
Tp.1
BRENDA
MUNICIPALITY OF
MUNICIPALITY OF MORTON
DELORAINE
CPR
CNR
(ABANDONED)
WATER PIPELINE
Turtle River
3
2
1W
21
450
R. No.60
FLOSSIE L.
PARTRIDGE L.
LONGMORE L.
RAMOSH L.
METIGOSHE L.
TURTLE MOUNTAIN FOREST RESERVE
MARGARET
NORTH DAKOTA (USA)
R.23W
R.22W



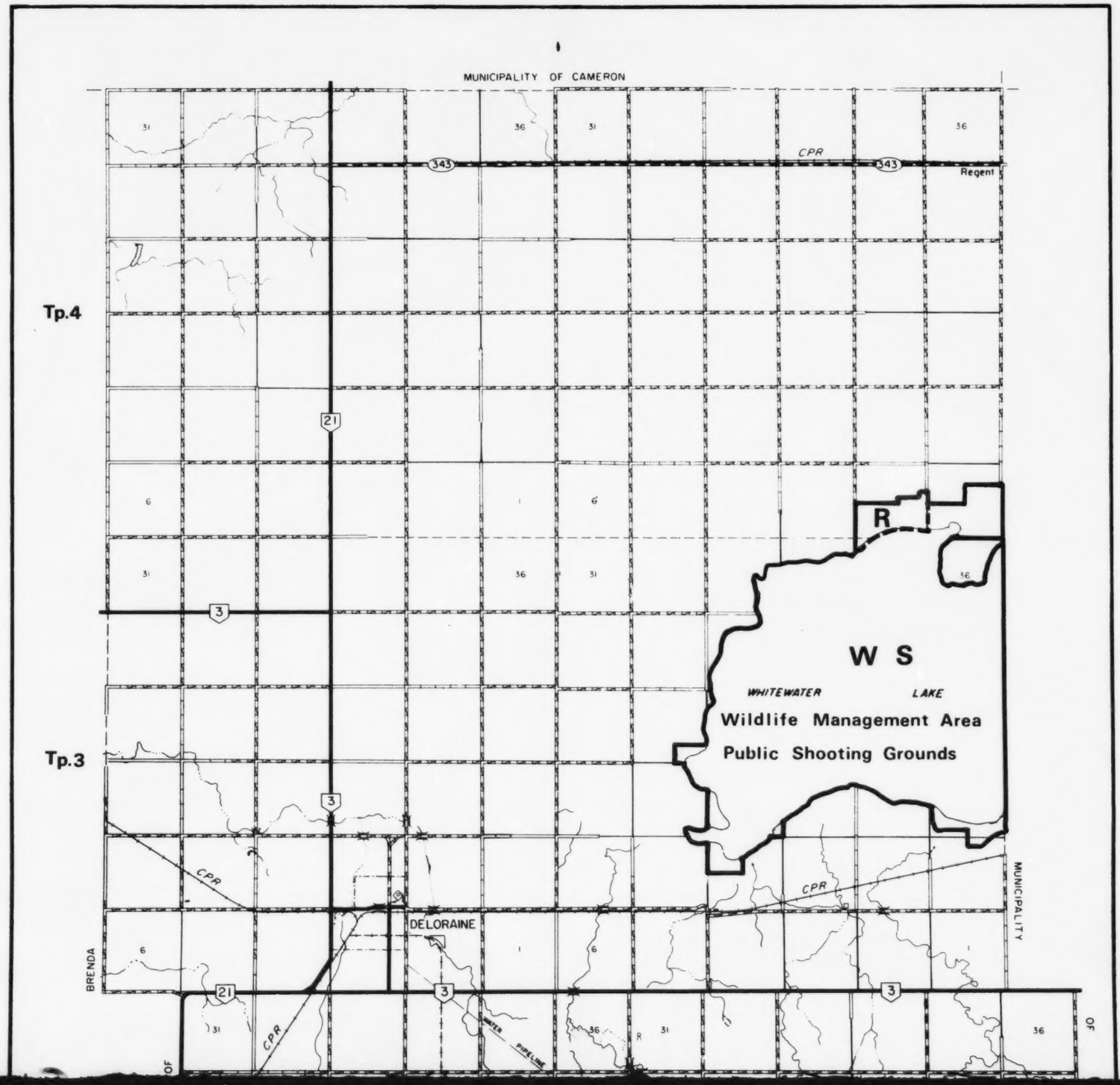
Map 7
Ungulate Capability and
Wildlife Management Areas.

Ungulate Capability (Classes 1W, 2 & 3) 2

Wildlife Management Areas .....

DEL~WIN PLANNING DISTRICT

1 0 1 2 3 4 5 mi.
1 0 1 2 3 4 5 6 7 8 km


MUNICIPALITY OF CAMERON
31
36
31
36
CPR
343
343
Regent
Tp.4
21
6
1
6
31
36
31
R
36
3
W S
WHITEWATER LAKE
Wildlife Management Area
Public Shooting Grounds
Tp.3
3
CPR
CPR
DELORAINE
BRENDA
MUNICIPALITY
6
1
6
21
3
3
31
36
31
36
CPR
WATER PIPE LINE
OF
OF

Tp.3

Tp.2

Tp.1

Wildlife Management Area

Public Shooting Grounds

DELORAINE

BRENDA MUNICIPALITY OF

MORTON MUNICIPALITY OF

CPR

CNR

(ABANDONED)

WATER PIPELINE

Turtlerock Creek

Rd No.60

FLOSSIE L.

PARTRIDGE L.

DROGORE L.

ERAMOSH L.

METIGOSHE L.

NORTH DAKOTA (USA)

TURTLE MOUNTAIN Provincial FOREST

Turtle Mountain P

MARGARET RESERVE Park P

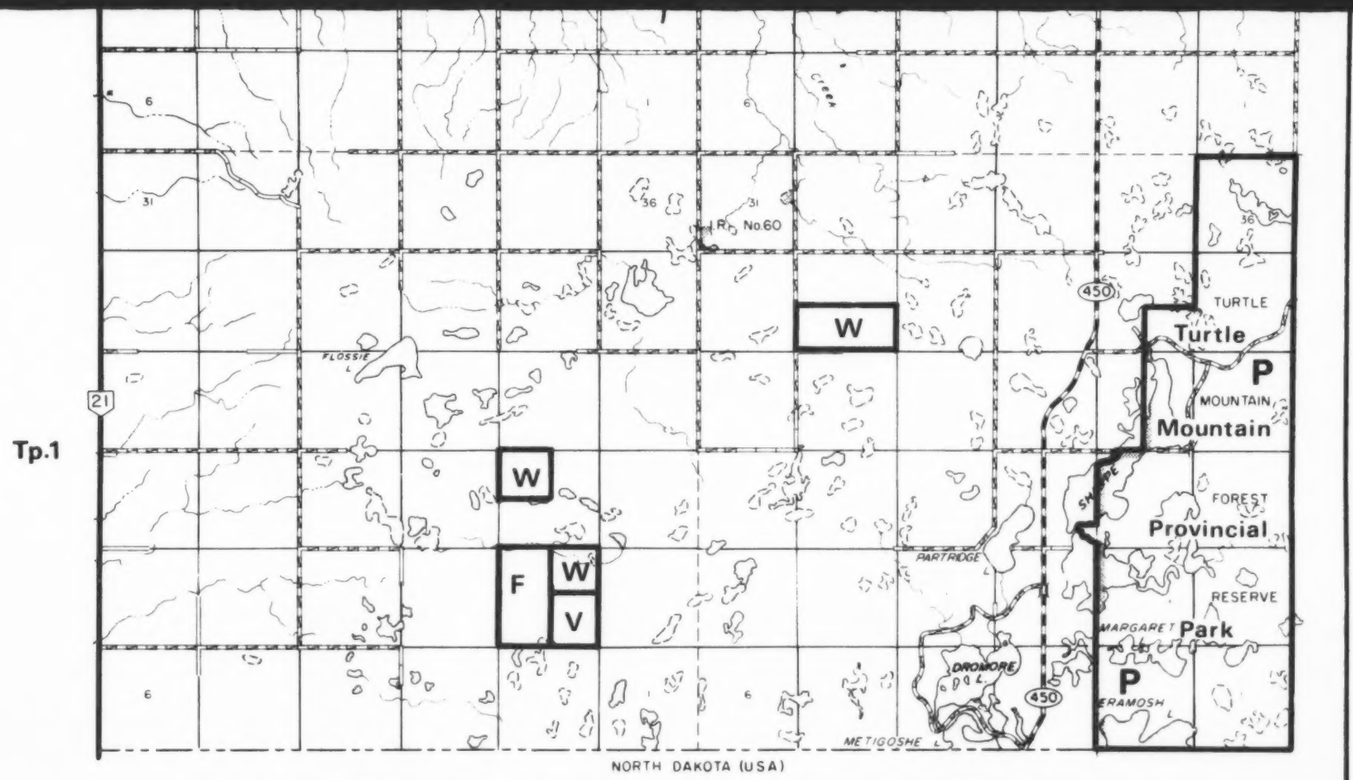
W

F

V

R. 23W

R. 22W



Map 8.
Crown Lands and
Crown Land Commitments

W Wildlife Management Area
F Forage Lease
R Renewable Hay Permit
P Provincial Park
S Public Shooting Grounds
V Vacant Crown Land

DEL~WIN PLANNING DISTRICT